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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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JANUARY, 1905.

No. 1.

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Our frontispiece this month was made direct from specimens in the collection of the Academy of Natural Sciences of Philadelphia, by the Photo-chromotype Company of Philadelphia. This is one of the largest companies in America doing this line of work. The specimens represented are as follows: *Eronia phocæa* Felder, from the Philippines. *Cyrestis elegans* Boisduval, from Madagascar. *Catagramma cynosura* Doubl.-Hew., from Brazil.

Micro-Lepidoptera of Algonquin, Illinois.

By WILLIAM A. NASON, M.D.

The following list includes species of Lepidoptera of the families of Pyralidæ, Tortricidæ and other "micros" arranged in the order given in Dyar's "List of North American Lepidoptera." The list is interesting from the fact that it adds to our knowledge of the geographical distribution of species; and also from the fact that the place of capture is peculiar in its faunal relations.

The town of Algonquin is situated fifty miles northwest of the city of Chicago, and less than thirty miles, in a direct line,

adjacent area. The lower ocellus consists of a single black spot, rather indistinct, and without white central point and surrounding ring. A very faint, submarginal black line and a marginal streak; secondaries same as primaries, an ocellus in the same position as the second one on primaries and resembling it.

Underside: primaries woodbrown but much mottled with other shades, many irrorations of darker color; submarginal to the two ocelli is a wavy, distinct brown band formed into crescents toward the inner margin; the upper of the two ocelli is like the one on the upperside, the lower is exactly like it only somewhat smaller. Between the ocelli and the margin is a comparatively broad, dark brown band; a marginal and submarginal distinct lines close together.

Secondaries: more mottled with grayish than the primaries; a very broad fascia in the center of the wing, extending from costa to base parallel to outer margin; the row of six ocelli placed in the usual position, the first is rather small, with a minute white dot in the center; next is much larger with distinct white central point; next consists of a small, black point only; next is a small one, with a distinct white central point; next is as large as the second and like it; the last one like the first. These ocelli are very constant, more so than in any other species. Between this row and outer margin is a brown band corresponding to that of the primaries; a marginal and submarginal fine, distinct streaks. Fringes all brown.

♀ expands 46 mm. Resembles the ♂ in all particulars except the following: the two ocelli on upperside of primaries are exactly alike and are like the upper one of the male. The one on the secondaries is larger and with a distinct, white central point.

Underside: the two ocelli on the primaries are slightly large and of same size. The row of ocelli on secondaries are practically like those of the male.

Habitat: Mt. Tamalpais, Marin County, California. Right across the bay from San Francisco, collected by Dr. Behr many years ago, probably between 1860 and 1870.

Types, 2, ♂, 2 ♀, collection California Academy of Sciences. Several cotypes.

This species is readily distinguished from any other by its small size, darker color and very distinct markings. Named for Hans Herman Behr, the beacon light of Californian Lepidopterology, whose name will be held in strong remembrance as long as Californian butterflies are collected and studied.

***Thanaos pernigra* n. sp.**

Upperside: primaries entirely blackish-slate, with a very thin sprinkling of grayish hairs; three very small, white dots arranged diagonally, in the

costo-apical part of the wing. Secondaries : entirely seal-brown, with long hairs along the inner margin and basal part of wing. Underside of both wings entirely Van Dyke brown ; the three costo-apical white spots visible through the wing. Abdomen and thorax same color as adjacent parts of the wings. Palpi clothed with long hairs. Antennæ entirely of same color as the primaries on the upperside.

Habitat : Mt. Tamalpais, Marin Co., California. Collected by Mr. F. X. Williams, May 19, 1904, in Mill Valley, on the slopes of Mt. Tamalpais. Only a few were captured but others were seen ; the species is no doubt extremely local in distribution.

Type 1 ♂, to be deposited in the collection of the California Academy of Sciences.

This species is very distinct from any other by its small size, and very dark, almost uniform color. Owing to a curious asymmetry in the clasps of the single male I possess, the description of these organs will have to be deferred till more specimens are available.

Canadian Cerambycidae.

The species of the past season.

By G. CHAGNON, Montreal, Canada.

Acmaeops proteus Kirby. Montreal, 14, vii. Entirely black.

Asemum mæstum Hald. St. Hilaire, Que., 24, v. under pine bark.

Callidium janthinum Lec. Val Morin, Que., common 10 to 25, vi.

Clytanthus ruricola Oliv. Common ; vi and vii.

Cirtophorus verrucosus Oliv. St. Hilaire, Que. 24, v.

Callimoxys sanguinicollis Oliv. St. Hilaire, Que. ♂ and ♀ 24, v.

Criocephalus agrestis Kirby. Montreal, vii, viii. They are generally taken at the electric lights.

Desmocerus palliatus Forst. Montreal, 48 specimens on Elder ; 28, vi.

Eudermes picipes F. St. Hilaire, Que., 1, vii.

Graphisurus fasciatus DeG. Montreal, A few chrysalids from beech.

Hoplosia nubila Lec. Montreal 18, vii. This species breeds in Linden.

Hyperplatys aspersus Say. Montreal, vi and vii. Taken several specimens on dead branches of willow, in which it must breed.

Leptura nitens Forst. Montreal, 27, vi.

Leptura exigua Newm. Common from 24, v to 15, vi.

Leptura hæmatites Newm. Montreal, 12, vi.

Leptura biforis Newm. St. John's, Que. 8, vii.

Leptura canadensis F. Common, vii.

Leptura vittata Germ. Common, vi, vii.

- Leptura lineola* Say. Common, vi, vii.
Leptura pubera Say. Common, vi, vii.
Leptura proxima Say. St. Hilaire, Que., St. John's, Que. vi, vii.
Leptura mutabilis Newm. Montreal, 10, vi.
Leptura chrysocoma Kirby. Val Morin, Que., common 19, vi.
Lepturges querci Fitch. Montreal, 25, vii.
Monohammus confusor Kirby. Montreal, 23, viii.
Neoclytus muricatus Kirby. Lévis, Que., 12, viii. On spruce logs.
Oberea bimaculata Ol. Common on raspberry, 8, vii.
Obrium rubrum Newm. Montreal, 25, vii.
Parandra brunnea F. Montreal, 25, vii.
Pogonocherus mixtus Hald. Montreal, 14, vii, on dead branch of willow.
Pachyta monticola Rand. Val Morin, Que., 17, vi.
Psenocerus supernotatus Say. Common on wild grape vine, 12, vi.
Phymatodes amœnus Say. Montreal, 12, vi. On wild grape vine.
Stenosphenus notatus Ol. Montreal, 12, vi.
Saperda puncticollis Say. Montreal. On woodbine 12, vi.
Saperda mulica Say. Montreal; several specimens on willow, 14, vii.
Saperda lateralis F. Montreal, 12, vi.
Saperda vestita Say. Montreal, chrysalids from linden.
Tragosoma harrisii Lec. Montreal. One specimen at electric lights, 17, vii.
Typocerus velutinus Ol. Common, vii.
Tetraopes tetraophthalmus Forst. Common, vii.
Toxotus trivittatus Say. Montreal. Common, 12, vi.
Xylotrechus undulatus Say. Lévis, Que., 12, viii, on spruce logs.

The above species, which number 44, were all taken during the past summer.

I was at Quebec in August last and took advantage of my trip to examine the material in some local collections there. Amongst the most important species I saw, were the following:

Rhopalopus sanguinicollis Horn. This species seems to occur frequently at Quebec and Lévis.

Phymatodes maculicollis Lec? There is a specimen of *Phymatodes* in the collection of Abbé Roy, Lévis, which I think can be referred to *maculicollis*. I regret that I did not have the opportunity of studying it more fully.

Piodes coriacea Lec. This species is in the Provancher collection without locality label. I have seen specimens from Rigaud, Que.

Monohammus marmorator Kirby. I saw several specimens of this species in collections at Quebec and at Lévis. I noticed, in the Laval University collection, specimens of this species labelled *titillator* F.

Saperda cretata Newm. Two specimens in the Laval University collection without locality label.

Records of some Paraguayan Orthoptera with the Description of a New Genus and Species.

By JAMES A. G. REHN.

The following records have been made from a small collection of Orthoptera taken at Sapucay, Paraguay. The material is the property of Mr. Morgan Hebard of Chestnut Hill, Philadelphia.

Family BLATTIDÆ.

Ischnoptera marginata Brunner.

One female (December 20, 1901).

Giglio-Tos has recorded this species from northern Argentina and the Bolivian Chaco.

Ischnoptera vilis Saussure.

Two males (one November 30, 1901).

Family MANTIDÆ.

Brunneria brasiliensis Saussure.

One male.

Family ACRIDIDÆ.

Ossa bimaculata Giglio-Tos.

One male and one female. October 31, 1902 and January 27, 1903.

This species was described from Resistencia nel Chaco, Argentina.

Tropinotus discoideus Serville.

Two females.

These specimens agree with a female individual from Paraguay referred to *discoideus* by Giglio-Tos, and a male and female from Brazil and Rio Grande do Sul received from Dr. Saussure. One of the Sapucay specimens is blackish brown in color with the maculations rather faint, the other is wood brown, the anal area of the tegmina pale, the maculations of the tegmina barely visible. Originally described from "Bresil," this species has since been recorded from Buenos Ayres and the province of Jujuy, Argentina, Caiza in the Chaco of Bolivia and Asuncion, Paraguay.

***Tropinotus regularis* Bruner.**

One male.

This specimen was examined by Prof. Bruner, who pronounced it a representative of a species at present undescribed and which he proposed to call *regularis*. In appearance it is quite distinct from the other forms of the genus, but I prefer to leave all remarks, however desirable, aside pending the description.

***Elæochlora viridicata* (Serville).**

One female.

This is inseparable from females from Carcarana, Argentina, except that the caudal tibiae and tarsi are not washed with pinkish red, but are uniform dull greenish in color.

***Chromacris stollii* (Pictet and Saussure).**

One male, one female.

While this species has been recorded from a number of localities in northern Argentina, this is apparently the first record from Paraguay.

***Zoniopoda omnicolor* (Blanchard).**

One male (February 18, 1902), one female.

This beautiful species is here recorded from Paraguay for the first time. The Sapucay specimens are inseparable from individuals from Carcarana, Argentina.

***Zoniopoda iheringi* Pictet and Saussure.**

One male (October 29, 1902), one female.

These specimens have been compared with an authentic female specimen from Rio Grande do Sul collected by Dr. Ihering and presented by Dr. Saussure. Except that the Paraguayan female is of smaller size, no important difference can be detected. In the male the caudal femora are obscurely bi-annulate with blackish fuscous.

***Stenopola puncticeps* (Stål).**

One female (December 19, 1902).

This species has been recorded from Caiza and San Francisco in the Bolivian Chaco; San Lorenzo in Jujuy, Argentina; Resistencia in the Argentina Chaco and Rio de Janeiro, Brazil.

***Aleuas vitticollis* Stål.**

One male (March 7, 1903).

This species was described from Sao Leopoldo, Rio Grande do Sul, Brazil, and Montevideo, Uruguay.

***Aleuas gracilis* Stål.**

One male (March 7, 1903).

The difference between this species and *A. vitticollis* is very apparent on comparing them, the slenderer build, more produced and acute fastigium and the form of the pronotum are the principal characters which readily distinguish *gracilis* from *vitticollis*. The original locality was Brazil.

ZYGOCLISTRON* n. gen.

Allied to the *Aleuas* and *Vilerna*, partaking of characters of both, but probably more closely related to the former and the genus *Paraleuas* Giglio-Tos in particular.

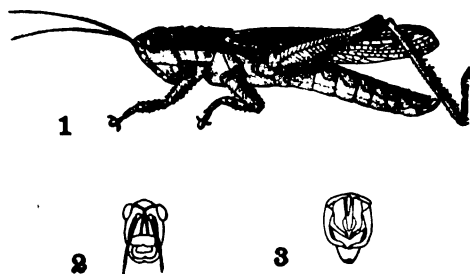
Form elongate, slender. Head with the fastigium acute, sharply carinate, excavated; frontal costa regularly expanding from the base of the antennæ to the clypeus; facial carinæ diverging to the same extent and parallel to the costa. Pronotum rugoso-tuberculate; median carina distinct, intersected thrice; ventral margin of the lateral lobes very slightly emarginate. Intervals between the mesosternal and metasternal lobes exceedingly narrow. Tegmina reaching the apex of the abdomen; area between the discoidal and ulnar veins with numerous transverse veins mesad. Posterior femora with very slight dentate points on the dorsal carina; tibiæ with eight spines on the external margin; second tarsal joint not quite half as long as the metatarsus. Subgenital plate compressed, produced into a moderately recurved process; supra-anal subequal proximad, acuminate distad; cerci long, slender, parallel in the proximal half, sharply incurved at the middle, the apex directed caudad and acute.

***Zygoclistron trachystictum*† n. sp.**

Type: ♂; Sapucay. Paraguay. March 20, 1902. Hebard collection.

* *Zygon* *yoke*, *πλειτρον* *bar*.

† *Τραχὺς* *rough*, *στικτον* *punctured*.



ZYGOLISTRON TRACHYSTICTUM n. gen. and sp. Type, fig. 1, lateral view; fig. 2, cephalic view of head; fig. 3, dorsal view of abdominal appendages.

Head rather large, occiput rounded and slightly elevated above the pronotum; vertex slightly descending, interspace between the eyes distinctly exceeding the greatest width of the frontal costa; fastigium slightly descending, acute, the marginal carinae sharp, shallowly and broadly excavated, foveolae large, trigonal, facing dorsad; frontal costa a simple sharp carina immediately below the fastigium, dividing at a line with the upper base of the antennae, carinae regularly and very distinctly diverging to the clypeal margin, shallowly but wholly sulcate; accessory facial carinae distinct and diverging at the same angle as the margins of the frontal costa; eye ovate in outline, quite prominent, very slightly shorter than the infra-ocular portion of the genae; antennae slightly exceeding the head and pronotum in length, slightly depressed. Pronotum narrow, subequal, rugoso-tuberculate except the ventral portions of the lateral lobes which are rugose; cephalic margin rotundato-angulate, caudal margin obtuse-angulate, the angle narrowly rounded and the margin slightly sinuate; median carina distinctly sub-cristate on the prozona and severed by each sulcus; no lateral carina present, a moderately marked shoulder present on the metazona; inferior margin of the lateral lobes slightly sinuate cephalad and caudad. Prosternal spine short, compressed, blunt, directed caudad. Interspace between the mesosternal lobes very narrow, the lobes sub-contiguous; interval between the metasternal lobes cuneiform, the lobes sub-contiguous at the narrowest (caudal) point. Tegmina not exceeding the apex of the abdomen, rotundato-truncate apically, discoidal field proximad irregularly reticulate, mesad with the portion between the discoidal and ulnar veins occupied by numerous parallel cross veins, those of the medio-discoidal area more numerous than those in the medio-ulnar section; no intercalary vein present. Wings equal to the tegmina in length. Last segment of the abdomen dorsal with triangular branches of the furcula; supra-anal plate equal proximad, acute and produced distad; subgenital plate produced, compressed, apical process recurved and exceeding the apical margin by a distance equal to half the length of the entire plate; cerci

elongate, narrow, straight and parallel proximad, at the middle with a short mesad curve, and near the apex with a distinct caudad bend, the apex acute and slightly depressed. Cephalic and median femora short, inflated, the tibiæ of the same limbs not exceeding the femora in length. Caudal femora slightly exceeding half the tegmina in length, tapering evenly but not gracefully to the genicular region, dorsal carina with several sub-obsolete dentiform serrations; tibiæ with eight spines on the external margin, ten or eleven spines on the internal margin, external apical spine present on one tibia and absent on the other; metatarsi over twice the length of the second tarsal joint.

General color ochraceous, the genæ, ventral part of the pronotum and the pleura gamboge yellow, a post-ocular streak, which is indistinct on the head and well marked on the pronotum and pleura, blackish; eyes and dorsal surface of pronotum tawny; antennæ with the apical half infusate. Tegmina hyaline with a faint greenish yellow tinge, the costal region with the veins obscurely yellowish, the base of the discoidal field with several distinct quadrate spots of blackish, and the axillary field saffron yellow. Abdomen with the lateral face of each segment with a diagonal blackish marking, which in form is crudely oval. Limbs of the general color, the caudal femora with blackish blotches along the carinæ; tibiæ saffron yellow, washed with blackish at the very apex, spines blackish apically, those of the internal margin with the whole internal face blackish.

MEASUREMENTS:

Length of body, ...	39. mm.
Length of pronotum, ...	7.5 "
Greatest width of pronotum, ...	4.5 "
Length of tegmina, ...	28. "
Greatest width of tegmina, ...	4.5 "
Length of caudal femora, ...	16.5 "

The type only has been examined.

Schistocerca infumata Scudder.

One male (January 15, 1903), one female.

This species has only been recorded from Montevideo, Uruguay and Brazil. This species is closely related to *S. flavofasciata*, of which a pair from Demerara have been examined, and with it possesses a pale flavous bar of the proximal portion of the costal margin of the tegmina. The form of the cerci of this species is quite different from that seen in *S. flavofasciata*.

Dichroplus bergii Stål.

One female (January 27, 1903).

This specimen was compared with females from Rosario and

Carcarana, Argentina, received from Prof. Bruner, and one female (Resistencia nel Chaco, Argentina), received from Dr. Borelli.

Dichroplus exilis Giglio-Tos?

Two males (January 16, 1903, and March 9, 1902).

These specimens do not wholly agree with the original description of *exilis*, the caudal femora being greenish above and without any black except in the genicular regions, while the cerci are subequal in the incurved apical portion. They are readily separated from *D. elongatus* Giglio-Tos by the shorter and less produced subgenital plate, the broader fastigium and vertex as well as the coloration.

Scopas obesus Giglio-Tos.

One female.

This individual fully agrees with the original description. This species is only known from Paraguay, Asuncion being the type locality.

Osmilia violacea (Thunberg).

Two males (December 20, 1901 and February 20, 1903), and one female.

Recorded from Asuncion and Colonia Risso in Paraguay by Giglio-Tos.

Osmilia obliqua (Thunberg).

One female (July 26, 1901).

Recorded from Asuncion by Giglio-Tos, and also from Resistencia nel Chaco, Tala and San Lorenzo in Argentina, and San Francisco and Caiza in the Bolivian Chaco. Thunberg's original specimen was from Brazil, and the Stockholm Museum contains Rio Janeiro material mentioned by Stål.

Family TETTIGONIDÆ.

Isophya borellii Giglio-Tos.

One male (January 18, 1903).

This species has previously been recorded from Asuncion, Paraguay, and Santa Rosa, Salta, Argentina.

Hyperophora angustipennis Bruner.

One male (March 19, 1903), one female (March 20, 1902).

This species has been recorded from Salta and Cordoba provinces, Argentina.

Family GRYLLIDÆ.

Eneoptera surinamensis (De Geer).

One male (March 4, 1903), two females (May 9 and November 8, 1903).

Previously recorded from Guiana, Brazil and Peru.

On the Habits of Two Ichneumonid Parasites of the Bee *Ceratina Dupla* Say.

BY S. GRAENICHER, Milwaukee, Wis.

During the summer of 1903 eggs and larvæ of an Ichneumonid were noticed in several nests of *Ceratina dupla*, a rather common bee in our region. I was thus enabled to study the life history of this parasite, and to obtain a number of mature insects, the latter emerging in the spring of the following year. Last summer while examining some nests of *Ceratina dupla* in search of additional material, a second Ichneumonid was found passing its larval stage in the nest of the bee, and of this species also mature insects were bred. These two Ichneumonids were sent to Mr. Henry L. Viereck, of Philadelphia, for identification, with the result that one of them was recognized as *Grotea anguina* Cress., while the other proved to be a new species, which Mr. Viereck has named and described as *Habrocryptus granicheri* (ENT. NEWS, Vol. XV, p. 333.) My sincere thanks are due to Mr. Viereck for his kind assistance in this matter.

To my knowledge no Ichneumonidæ have as yet been reported from the nests of bees. Besides, one of the parasites under consideration, *Grotea anguina*, is still the more remarkable from the fact that its larva, during a certain period of its development, leads the life of a vegetarian, subsisting for a few days on the mixture of pollen and nectar, the so-called bee-bread stored away by the bee. In regard to the habits of the Ichneumonidæ, Sharp (The Cambridge Natural History, Vol. V, p. 557, 1895) makes the following statement: "Although the Ichneumonidæ are perhaps the most purely carnivorous of all the great families of Hymenoptera, there is nevertheless reason for supposing that some of them can be nourished with vegetable substances during a part at any rate of the larval existence, Giraud & Cameron (Ent. Month. Mag. XIII, 1879, p. 200) having recorded observations that lead to the conclusion that some species of the genus *Pimpla* may inhabit galls and live on the substance, or juices thereof." It is interesting to note that our species *Grotea anguina*, whose larva during a

part of its life feeds on vegetable matter, is also a representative of the Ichneumonid subfamily Pimplinæ, while *Habrocryptus grænicheri*, the second parasite to be considered in this paper, belongs to the subfamily Cryptinæ.

Before dealing with the habits of these parasites, I prefer to briefly consider the habits of the bee *Ceratina dupla*, as observed in our surroundings. Both sexes pass the winter together in hollow stems, and copulate in the spring, but not very early. Last season (1904), which was an exceedingly late one, they were seen copulating on the flowers of the dandelion on May 19th and 20th, although some bees of other genera (*Andrena* and *Halictus*) were preparing their nests already at the end of April. In this same locality the *Ceratina* bees did not take up the work with their nests until about June 14th. The pithy stems of various plants are hollowed out, sometimes to a considerable depth, and cell after cell is furnished with the food supply and an egg, each cell being separated from its neighbors by a partition of its particles. Around the beginning of August the first young bees appear in the cells at the bottom of the nest, and these have to wait, as Comstock has observed, until all the others above them (sometimes 15 or more) have emerged, whereupon the whole family is led out of the nest by the mother bee. This does not take place before the second half of August or even the beginning of September. Comstock witnessed two broods in his surroundings, but in our region I have never seen these bees produce more than one brood.

***Grotea anguina* Cress.**

Altogether 16 nests of *Ceratina dupla* containing either the eggs or the recently hatched larvæ of the parasite *Grotea anguina* were obtained.

The eggs of parasitic insects are often remarkable on account of their small size, and in this particular case the difference in size between the egg of the parasite and that of the bee is at once noticeable. The egg of the latter is about $2\frac{1}{2}$ mm. long and 1 mm. broad, while that of *Grotea anguina* hardly reaches more than one-half of the length and one-fourth of the breadth of the bee's egg. As a rule the egg of the parasite is placed

lengthwise on top of the egg of the bee. The larva of the parasite may emerge earlier or a trifle later than the bee larva, but in either case it proceeds to suck the contents of the egg or of the young larva of the bee, mostly securing a hold on the anterior part. Within a short time a shrivelling of the egg or larva may be observed, and at the end of about 24 hours the anterior portion has been emptied of its contents. Thereupon the parasite turns around, and empties the remaining portion, so that at the expiration of 2 days on the average only the dry remains of the egg or larva of the bee are visible. The parasitic larva now takes up a position on the bee-bread and feeds on this for the next 3 or 4 days as eagerly as if it were a bee larva. It thereby increases considerably in size, and then forces its way through the partition into a neighboring cell, sooner or later killing and eating up the bee larva of this cell. It usually invades a third cell, also destroying the resident of the latter, and sometimes even a fourth cell is entered with the same result. At the age of 13 or 14 days the parasitic larva is full grown, measuring from 12 to 14 mm. in length, and it then begins to spin a cocoon. At first the pith particles, remains of destroyed bee larvæ, pieces of bee-bread, etc., are cleared out of the way for a length of 3 or 4 cm. so as to make room for the future cocoon. This having been done, a solid, hard partition is spun at the upper end of the canal, and one placed at the lower end. These are very resistant, and protect the larvæ from attacks coming from above or below. The chamber between these two plug-like partitions is furnished with a lining of a thin white membrane, the larva finally deposits its excreta at the lower end of the chamber, and lives throughout the winter as a "resting larva." In the spring pupation takes place, and the mature insect comes out in time to deposit its eggs in the nests of *Ceratina dupla*.

From the larvæ kept in a heated room throughout the winter 5 ♂ and 6 ♀ specimens of *Grotea anguina* were obtained, the earliest one, a ♂, emerging on March 9th, and the latest one, a ♀, on May 23rd. These insects appeared for good reasons earlier than those hibernating under natural conditions.

As a rule the egg of this parasite is deposited in the lowest

cell of the nest, less frequently in the next lowest, but occasionally also higher up. In the majority of the nests one cell only contains a parasitic egg, although in 4 out of the 16 nests 2 cells were infested. One nest, collected July 27th, 1903, was kept under observation with especial interest, as it contained 2 parasitic eggs on the egg of the bee in the lowest cell, and in addition to this a parasitic egg on the bee's egg in the adjoining cell. One of the parasitic larvæ in the lowest cell killed the other one, it then pursued the usual course of eating up the bee's egg and feeding on bee-bread, and then entered the next cell and there destroyed the somewhat smaller parasitic larva. This occurrence shows that the larva of this parasite instinctively attacks any other larva it may come in contact with inside of the nest.

The normal position of the egg of the parasite is on top of the bee's egg, but in two instances it was placed some distance from the latter on the bee-bread. This, however, did not interfere with the development of the parasite in either case, as the young larva crawled around until it reached the egg of the bee.

***Habrocryptus grænicheri* Vier.**

On June 23, 1904, a *Ceratina* nest was found with a cell containing the small eggs of a parasite on the top of the bee's egg. This egg resembled rather closely that of *Grotea anguina*, and it was thought to belong to that species until the larva made its appearance. The form of the latter, as also its habits made it clear that we were dealing with some other parasite. Later on 5 additional nests with the eggs of this parasite, *Habrocryptus grænicheri*, were obtained, the last one on July 4th.

In size and form the egg of this species agrees with that of *Grotea anguina*, although it is a trifle smaller and somewhat more pointed behind. It produces a cylindrical larva with a large head and distinctly constricted segments, quite different from the more elliptical larva of *Grotea anguina* with a small head and without constricted segments. The feeding habits of the larva of this *Habrocryptus* are peculiar. It moves around on the egg and later on the young larva of the bee, now and then sucking superficially, but without inflicting any damage

to the egg or the larva, and evidently obtaining a small amount of food, as is shown by its very slow growth. These sucking movements are performed in a characteristic manner. The parasite brings its mouth-parts in contact with the surface of the egg or the young larva, and sucks for a few moments, whereupon it releases its hold with a jerky upward movement of the head and crawls forward a short distance to repeat the same performance. As already stated, the bee's egg shows no ill effects whatever, it produces a normal bee larva, and the latter partakes of its food-supply, and thrives as well as any other bee larva. A remarkable feature is the tolerance displayed by the bee larva towards the small parasite crawling around on its body and sapping its juices. The bee larva keeps on feeding and does not seem to be inconvenienced in the least by the presence of the parasite. On one occasion the latter was observed to take up a position on the side and within easy reach of the mandibles of the bee larva. It might have been destroyed with but little effort on the part of the bee larva, but nothing of the kind happened.

The parasitic larva increases very gradually in size, especially during the first 4 or 5 days of its life, but at the age of about 8 days it makes a serious attack on the half grown *Ceratina* larva, killing it, and sucking its contents. This brings about a rapid growth of the parasite. It soon invades a neighboring cell, destroys the bee larva therein, and occasionally raids 3 or 4 cells in the same way. At the age of about 13 days it is ready to spin its cocoon, and for this purpose it makes use of the space occupied by 2 or 3 of the broken up cells. The cocoon is hurriedly and lightly constructed, and is not protected by any plug-like partitions as in the case of *Grotea anguina*. About 6 days later pupation takes place, and at the end of 11 more days the perfect insect emerges. So that the entire development from the appearance of the larva to that of the imago is accomplished within 30 days on the average. From the 6 nests under observation 4 perfect insects were bred.

REVIEW.

Although these two parasites represent two distinct types of Ichneumonidæ, one being a *Pimpline* and the other a *Cryptine*,

they both adopt the same method of depositing their eggs on the egg of their host *Ceratina dupla*. But in the development of the larva at the expense of the egg or larva of the bee, each of them pursues a different course. The larva of *Grotea anguina* first increases its size by taking up the contents of the egg or young larva of the bee, but it is still rather small and feeds for several days on pollen and nectar before undertaking the task of breaking through the partition into a neighboring cell in search of a bee larva for food. It starts out as a carnivorous larva, thereupon it passes over to the diet of a vegetarian, and finally returns to carnivorous habits. *Habrocyptus granicheri*, on the other hand, does not destroy the egg of the bee, and furthermore it spares the life of the bee larva until the latter has reached a considerable size. During more than one-half of its larval existence it partakes of a very small amount of food, derived superficially from the egg or the larva of the host, and it grows extremely slowly. But finally, by killing the bee larva and feeding on its contents it enters a period of rapid growth, and later on it invades one or more of the bee cells in pursuit of prey in exactly the same manner as does the larva of *Grotea anguina*. The time necessary to complete the growth of the larva is about the same in either of the species, being 12 or 13 days, but in the later development there is a great difference between the two. After completing its cocoon, the larva of *Grotea anguina* remains as a so-called resting larva in a state of inactivity until the spring of the following year, when it pupates, and appears as a mature insect at about the time the *Ceratina* bees start to build their nests. During this entire period, lasting at least 10 months, the resting larva might suffer injury from different sources (attacks of parasites, inclemency of the weather, etc.) if not properly protected, and we understand the importance of the strong defensive partitions erected at the upper and lower end of the cocoon chamber. Furthermore, the parasite does not always deposit its egg in the lowest cell, but sometimes as high up as the 7th cell, as observed in one of the nests. In such a case there may be several young bees emerging from the lower cells in late summer. These, in order to leave the nest would have to break

through the cocoon of the parasite, and thus endanger the life of the latter, if not held back by the very effective barrier of a defense partition. I have come across two old nests of *Ceratina* with an empty cocoon-chamber of the emerged parasite, and several dead *Ceratina* bees below the lower partition. The parasite is able to gnaw its way through the partition but the bees can not overcome such an obstacle.

There is no period of a "resting larva" in *Habrocryptus grænicheri*. Very shortly after the spinning of a cocoon a pupa is formed, and 11 or 12 days later the imago makes its appearance in advance of the young *Ceratina* bees. No necessity exists for the construction of defense partitions at the ends of the cocoon-chamber, the later being protected by the still occupied bee-cells, and the cocoon is a simple affair, as compared with that of *Grotea anguina*.

It takes *Grotea anguina* about a year to pass through its entire development, and of its habits throughout the year we are pretty well informed. Not so with *Habrocryptus grænicheri*. This parasite goes through the different stages within a month, but as to its doings and whereabouts during the remainder of the year we know nothing.

The mode of oviposition has not been observed in either of the species, although I have repeatedly seen *Grotea anguina* flying around in the neighborhood of the nests of *Ceratina dupla*. The ovipositor of *Habrocryptus grænicheri* is 3 mm. in length, and that of *Grotea anguina* over 4 mm., and in both species it is strong and well developed.

In the Eastern States several small Hymenopterous parasites have been bred from the nests of *Ceratina dupla*, but in our region the two Ichneumonids considered above are the only parasites of this bee so far observed. It has been shown that the larva of either of these Ichneumonids is a very destructive inhabitant of the bee's nests, always killing more than one of the bee larvæ. Such a parasitic larva when full grown is longer than a cell of the *Ceratina* nest, and consequently it has to occupy at least two of the cells. But notwithstanding the destructive tendency of the parasites, they do not seem to occur in sufficient number to interfere materially with the frequency of *Ceratina dupla*.

A List of Coleoptera.

Taken on the Summit of Mt. Seward, N. Y.

By C. O. HOUGHTON.

On June 22, 1901, the writer, accompanied by Dr. A. D. MacGillivray of Cornell University, spent a short time in collecting insects upon the summit of Mr. Seward, one of the highest peaks in the Adirondack Mountains.*

This mountain lies ten or twelve miles to the east of Axton and rises to a height of about 4500 feet above the sea level. The sides are quite heavily wooded and in places very precipitous and the top is thickly studded with dwarfed spruce and balsam trees, so small that one can almost walk over the tops of them although they have attained a considerable age.

The trip to this mountain was made from Axton, on the last day of our outing at that place† and owing to the roughness of the road and the difficulties in the ascent only about a half hour was available for collecting purposes at the summit; and this was about all we could endure, for the black flies (*Simulium* sp.) simply swarmed there and rendered collecting well nigh impossible. In all of our collecting in the low lands about Axton, although tormented a great deal by the black flies and mosquitoes, we had experienced nothing like it and I think that fully as much time was expended in trying to fight off these pests as in our collecting operations.

Near the point where we reached the top and from which we did not venture far, as the trail ended there and the walking was very difficult, there was an old signal station which had been made use of some time before. This was simply a tower-like frame built up to a height of perhaps 15-20 feet with poles cut from the sides of the mountain, and upon this we secured a number of the beetles listed below. Our attention was chiefly directed to the collection of Coleoptera and indeed, with the exception of the black flies, but few other insects were seen.

* Mt. Marcy, the highest, has an elevation of 5379 feet.

† See "A List of Insects Taken in the Adirondack Mountains, New York—I." By Alex. MacGillivray and C. O. Houghton—ENTOMOLOGICAL NEWS, Vol. XIII, 1902, p. 247.

The following list embraces only those species taken on the summit, some of which were also taken at Axton;* when taken at both places it is so designated. The number following the name indicates the number of specimens taken on Mt. Seward. Most of the material was determined by Mr. Chas. Liebeck; the writer is responsible for the remainder.

STAPHYLINIDÆ.

- Homalota* sp., 1.
Alceocharid, undetermined, 1.
Xantholinus cepulus Say, 1.

COCCINELLIDÆ.

- Harmonia picta* Rand., 1.
Hyperaspis bigeminata Rand., 60-75.†

CUCUJIDÆ.

- Læmophlæus convexulus* Lec., 1.

CRYPTOPHAGIDÆ.

- Cryptophagus* sp., 3.

ELATERIDÆ.

- Elater socer* Lec., 2.
 " *nigricans* Germ., 1.
Agriotes limosus Lec., 1.‡
Limontius pectoralis Lec., 9.
Corymbites spinosus Lec., 1.
 " *appressus* Rand., 1.

BUPRESTIDÆ.

- Dicerca divaricata* Say, 1.‡

MALACHIDÆ.

- Attalus nigrellus* Lec., 1.

CLERIDÆ.

- Thanasinus dubius* Fab., 1.

CERAMBYCIDÆ.

- Asemum moestum* Hald., 4.
Tetropium cinnamopterum Kirby, 1
Pachyla monticola Rand., 2.‡
Acmæops pratensis Laich, 1.

CHRYSOMELIDÆ.

- Galerucella decora* Say, 1.‡
Disonycha pennsylvanica Ill., 1.

MELANDRYIDÆ.

- Xylita lævigata* Hellw., 1.

OEDEMERIDÆ.

- Asclera puncticollis* Say, 2.

CEPHALOIDÆ.

- Cephaloon lepturides* Newm., 1.‡

CURCULIONIDÆ.

- Apion walshii* Smith, 1.

SCOLYTIDÆ.

- Pityophthorus materiarius* Fitch, 1.
 " *sparsus* Lec., 1.
Xyleborus cælatus Eich., 1.
Polygraphus rufipennis Kirby, 6.

Mr. and Mrs. E. B. Williamson, of Bluffton, Indiana, left home on December 31 for Guatemala, where they will collect insects. Mr. Williamson, who is favorably known for his papers on dragon flies, will pay special attention to that group.

* By an oversight, all of the species taken on Mt. Seward were included in the list of Coleoptera taken at Axton and vicinity.

† These were all taken on, or close to, the old signal tower; many others could have been secured.

‡ Taken also at Axton.

A New Lac-Insect.

By T. D. A. COCKERELL.

The lac-insects (*Tachardia*) are for the most part members of the tropical fauna, and only a few species occur within the boundaries of the United States. In New Mexico *T. cornuta* Ckll. has long remained unique, and I did not expect to see a second species from that region. However, one has come to hand, and from a locality in which I have collected many times, without finding it. It must be extremely local; the explanation of this fact is sufficiently evident when on boiling up the material received, I find it severely attacked both by a fungus and a chalcidid.

***Tachardia glomerella* n. sp.**

Crowded on the stems of *Gutierrezia glomerella* Greene the individuals coalescing in large numbers, but not (in the material received) entirely surrounding the stems; color very dark, with translucent shining orange-red rounded bosses, suggestive of guava jelly; scales smooth and roundec, without (even when young) any distinct projection such as is seen in *T. cornuta*; female when boiled and mounted colorless, about 3 mm. long; the crimson pigment produced on boiling very abundant, making the liquid extremely dark; caudal process yellowish-brown, only moderately chitinated, very broad basally, emitting no hairs from its apex; dorsal excretory processes cylindrically slightly broadened to the base, colorless.

Larva with antennæ 6-jointed, joints 3 and 6 long (6 longest), the others short, 4 and 5 with a stout spine subapically, 6 with a similar but larger spine at about the beginning of its last third; apex of 5 with two extremely long hairs, nearly twice as long as the sixth joint.

Found on the mesa near Little Mountain, Mesilla Valley, New Mexico, Oct. 6, 1904, by Dr. David Griffiths. Communicated by Professor E. O. Wooton.

Larger and darker than *T. cornuta*, and without the protuberance. Much darker and otherwise different from *T. fulgens* Ckll.; without the stripes and lateral foot-like processes of *T. fulvaradiata* Ckll. The *Gutierrezia* is very abundant in the Mesilla Valley.

PULVINARIA FICUS Hempel.--This coccid was recorded from the West Indies by Maxwell-Lefroy, who gave measurements of the antennæ and legs. An examination of the data presented shows that the species was not *P. ficus* at all, but *P. cupaniæ* Ckll. The true *P. ficus* is known only from Brazil.—T. D. A. COCKERELL.

The Spreading of *Sphaeridium Scarabaeoides* L.

BY FREDERICK KNAB.

This beetle is not only spreading through the Eastern States, as shown by Mr. C. O. Houghton, in the last volume of ENT. NEWS, p. 310, but also to the westward. Upon a recent visit to Chicago I was surprised to see a fine series of this insect among the local captures in the collection of Mr. A. B. Wolcott. Although Mr. Wolcott has collected industriously about Chicago for a number of years, he had never seen this species until he met it on October 9, 1904. Upon that date he captured 23 specimens and could have taken many more. The specimens were all found on the lake-shore embankment in the northern part of the city where they doubtless crawled after being washed ashore. They were very active and would readily take flight after running a distance of one or two inches. Mr. Wolcott also captured a single specimen on November 2, 1904, so that it would seem that the species is established about Chicago, though evidently a very recent arrival. The above specimens show considerable variation in the color-markings of the elytra, and also in size, the specimens measuring from 4.5–7 mm.

It is an interesting feature in the spread of the species in the East that it seems to have invaded the Connecticut River valley from the southward. The writer took a single specimen near Mount Tom, Mass., in the summer of 1902, and the following season encountered it at various points in Hamden County, Mass., while the Rev. C. Crozet had already found the species plentiful about Hartford, Conn., in 1901.

I should be obliged to you if you would call attention in Notes and News to the fact that I shall be glad to examine and name any *Cryptocerate Hemiptera* sent to me, except *Corixas*. I am working on these groups for the North American fauna, and find it extremely difficult to get material. There is so very little known about them that even our accepted text books contain glaring errors. I should be glad to answer any queries regarding these insects.

I see that my friend, Mr. G. W. Kirkaldy, implies that I might give you some information regarding the method of "oaring" in water bugs. Quoting offhand from casual observation, I would say that *Belostoma*, *Corixa* and *Notonecta* move the hind legs together. *Ranatra* I have observed several times, and that curious insect paddles through the water in a very curious way. It uses the second and third pairs of legs, which it moves alternately, first one pair and then the other. It is a very slow and awkward swimmer.—J. R. DE LA TORRE BUENO, 25 Broad St., N. Y.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—Ed.

PHILADELPHIA, PA., FEBRUARY, 1905.

If in the evolution of species there had been no breaks or gaps it would be impossible to differentiate species, and even now complete series would make it very difficult to draw lines and separations. Our tools, so to speak, for the identification of species may be divided into figures, word descriptions and types. Some very distinguished entomologists believed in the former two tools only, as they did not care to go beyond the failure or the possibilities of the tools. A carpenter may say feet and inches are fine but millimeters are of doubtful value and micromillimeters perfectly idiotic. We can sympathize with that carpenter as micromillimeters are of no value to him. Figures and more particularly words may appear equally idiotic to some entomologists because they are inadequate to describe or differentiate some of the minute differences in insects. In other words, in some instances the study has gone beyond the standards of measurement. When we are stranded in this way recourse must be had to types, and that is why types are becoming more and more worshipped every day. Would it not be infinitely better to wait until the tools or standards of measurement become delicate enough to measure all differences and not let the *mihi itch* run away with our sound judgment?

To make the thing clearer and perhaps to illustrate and exaggerate a tendency we cite the following: The celebrated mammologist, Dr. Coyote, discovers a peculiar beetle among

some skins and is very curious to know the species and asks an entomological friend what it is. Mr. dear Dr. Coyote the genus to which that species belongs was monographed by Dr. Lectularius, his types are in the Royal Museum at Khartoum, and it is simply impossible to identify that species from either his figures or descriptions ; you must personally examine his types.

Dr. Coyote lived in New York and his father was the owner of the Metropolitan Traction Company. So the next day at 8 A. M. he started for the State of Kordofan.

For the past two years I have noticed that the larvæ of one of our Geometrid moths, *Zerene* (*Cingilia*) *catenaria* was doing considerable damage to some of our small shrubs and bushes in certain localities. On August 15, 1903, in one place within the city limits I saw quite a large area where there was scarcely anything but bayberry bushes, that had the appearance of having been swept by a fire, the leaves having been completely eaten leaving nothing but the thick ribs, which had turned brown. At this time the larvæ were beginning to pupate, many having already done so. On July 22, 1904, in another locality, some five miles away, I found these larvæ in great abundance, being about half or two thirds grown. They had stripped many bushes and shrubs of their leaves ; in this place their food was more varied ; I noticed them on bayberry, sweet fern, low blueberry, young white birch trees, and on a few young oaks. About the same time I noticed them in still another locality about midway between the two last ; here also they were feeding on bayberry, sweet fern and to some extent on young white birch trees, and had stripped many of them.—JAMES E. BILLSON, Providence, R. I.

Doings of Societies.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held December 22, 1905. In the absence of the Director, Dr. Castle presided. Fourteen persons were present. The following were elected officers to serve for the year 1905 : Director, Philip Laurent ; Vice-Director, H. W. Wenzel ; Treasurer, E. T. Cresson ; Recorder, Henry Skinner ; Secretary, Frank Haimbach ; Conservator, Henry Skinner ; Publication Committee, C. W. Johnson, J. H. Ridings.

HENRY SKINNER, *Recorder*.

A joint meeting of the Association of Economic Entomologists, the Entomological Section of the Academy of Natural Sciences of Philadelphia, the American Entomological Society and the Feldman Collecting Social was held in the Entomological rooms of the Academy of Natural Sciences of Philadelphia on December 29, 1904. Dr. Philip P. Calvert was elected Chairman of the meeting and Dr. Henry Skinner acted as Secretary. Among those present were :

Levi W. Mengel, Pennsylvania.	C. T. Greene, Pennsylvania.
J. H. Matthews, Pennsylvania.	H. N. Poole, Pennsylvania.
J. A. G. Rehn, Pennsylvania.	G. M. Greene, Pennsylvania.
E. M. Walker, Ontario.	H. A. Wenzel, Pennsylvania.
J. G. Saunders, D. C.	J. F. Strauss, D. C.
H. L. Viereck, Pennsylvania.	A. A. Girault, D. C.
F. C. Bishopp, D. C.	L. Martin, D. C.
C. S. Mead, Ohio.	J. B. Smith, New Jersey.
H. A. Surface, Pennsylvania.	J. J. Repp, Pennsylvania.
J. F. McClendon, Pennsylvania.	E. S. G. Titus, D. C.
C. P. Gillette, Colorado.	W. A. Riley, New York.
James Fletcher, Ontario.	A. F. Satterthwait, Pennsylvania.
L. O. Howard, D. C.	Herbert Osborn, Ohio.
C. O. Houghton, Delaware	W. D. Hunter, Texas.
W. S. Huntington, Pennsylvania.	W. M. Scott, D. C.
M. V. Slingerland, New York.	G. W. Martin, Tenn.
E. L. Dickerson, New Jersey.	E. D. Sanderson, New Hampshire.
Henry C. McCook, Pennsylvania.	F. W. Rane, New Hampshire.
E. P. Felt, New York.	E. Daecke, Pennsylvania.
T. H. Schmitz, Pennsylvania.	C. W. Fenninger, Pennsylvania.
D. M. Castle, Pennsylvania.	J. C. Bradley, New York.
H. E. Summers, Iowa	A. F. Burgess, Ohio.
G. M. Bentley, North Carolina.	A. L. Quaintance, D. C.
Frank Benton, D. C.	H. T. Fernald, Massachusetts.
Umekichi Nawa, Japan.	W. E. Britton, Connecticut.
H. A. Snyder, Pennsylvania.	F. L. Washburn, Minnesota.
Frank Haimbach, Pennsylvania.	C. E. Chambliss, South Carolina.
H. W. Wenzel, Pennsylvania.	Henry Skinner, Pennsylvania.
F. Weigand, Pennsylvania.	P. P. Calvert, Pennsylvania.
W. J. Coxey, New Jersey.	

Dr. Calvert gave an account of his method of work in the differentiation of the species and genera of Odonata for the Biologia Centrali-Americana.

Dr. Skinner spoke of the classification of the Hesperidæ based on the costal³fold.

Prof. J. B. Smith discussed the value of characters used in classification and specially referred to his work on the genitalia of *Lachnosterna*.

Dr. L. O. Howard complimented Dr. Calvert on his work and referred to the value of larval characters. He also mentioned the utility of genitalic characters in elucidating other smaller differences.

Prof. Quaintance talked of his studies in the Aleyrodidæ, and said the classification of the family was based on larval characters.

Dr. Felt alluded to his recent work on mosquitoes and said exact illustration by the aid of photo-micrographs was of very great importance.

Prof. E. D. Sanderson said he had used a method similar to that of Dr. Calvert and found it very useful in the study of plant lice.

Dr. Henry C. McCook spoke eloquently of the great value of entomological studies and contrasted the early days with present universal recognition of the value of such studies.

Prof. H. E. Summers gave an account of a method of mathematical differentiation of species, trying to elucidate by a single character the expression of the others.

Mr. H. L. Viereck gave a resumé of his studies in Andrenidæ.

Mr. Rehn gave an address on the extralimital species of Orthoptera.

Mr. E. M. Walker commented on Mr. Rehn's communication and spoke of the Canadian species.

Dr. James Fletcher spoke lovingly of Canada and referred to his studies of rare Canadian butterflies, such as *Arg. astarte*, *Chion. alberta* and *Erebia vidleri*.

Prof. Quaintance said he wished to thank the Philadelphia Entomological Societies in behalf of the visiting entomologists for their hospitality and the good time shown them.

Dr. Calvert made some remarks on the value of organizing a National Entomological Society. After discussion, Mr. Bradley moved that a committee of three be appointed by the Chair to consider the matter. The committee appointed consisted of E. D. Sanderson, H. T. Fernald and J. C. Bradley. After the meeting some time was spent in social intercourse over the refreshments provided by the local committee.

HENRY SKINNER, *Secretary*.

A meeting of the Entomological Club of the American Association for the Advancement of Science was held in the rooms of the American Entomological Society, in the building of the Academy of Natural Sciences of Philadelphia, on Friday evening, December 30, 1904. The following were present : F. Benton, F. C. Bishopp, J. C. Bradley, D. M. Castle, C. E. Chambliss, M. T. Cook, E. Daecke, C. W. Fenninger, H. T. Fernald, W. J. Fox, C. P. Gillette, F. Haimbach, W. D. Hunter, L. Martin, A. D. MacGillivray, J. H. McGregor, U. Nawa, J. L. Phillips, A. L. Quaintance, J. A. G. Rehn, W. A. Riley, E. D. Sanderson, W. M. Scott, H. Skinner, R. M. Strong, H. E. Summers, E. S. G. Titus, H. L. Viereck, F. L. Washburn, H. A. Wenzel, H. W. Wenzel.

In calling the meeting to order the President, Dr. Henry Skinner, spoke of the meeting of the Entomological Club held twenty years before in the Hotel Lafayette, in Philadelphia. In the absence of the Secretary, Mr. E. V. Wilcox, Mr. J. C. Bradley was elected to take his place. Mr. H. A. Morgan was then elected President, and Mr. G. W. Herrick Secretary for the New Orleans meeting in 1905. Dr. Skinner was elected permanent Secretary, whose duty it should be to notify officers of their election and see that the business of the club is attended to.

At a joint meeting of the Association of Economic Entomologists and the American Entomological Society the previous evening, a committee had been appointed to report at this meeting on the advisability and means of establishing a national association of entomologists. The following report from this committee was read :

*Report of the Committee on a National Association of
Entomologists.*

Your committee believes that there is room in America for an association of entomologists wherein all divisions and all branches of entomology shall be represented ; an association which shall bring together all aspects of the science and throw its influence in favor of harmony and uniformity of practice. Such an association will be a success, however, only if it is established on a broad basis, and with a membership which shall be truly American rather than sectional.

Your committee therefore recommends the selection by this meeting of a committee of three, not members of any of the societies named below, whose duties shall be :

1. To communicate with the American Entomological Society, the New York Entomological Society, the Entomological Society of Washington, the Cambridge Entomological Club, the Entomological Society of Ontario, and the Pacific Coast Entomological Society, requesting each to select some member to represent his society on this committee.

2. As soon as four of these societies shall have elected members of the committee, the entire committee shall prepare a constitution and by-laws and plan of work for a proposed American Society of Entomologists, and report them at such time and place during 1905 as shall seem to them most likely to find the greatest number of entomologists assembled. Notice of this meeting to be first published in ENTOMOLOGICAL NEWS and the Canadian Entomologist.

3. This committee shall also arrange a program of discussion on some entomological topic for the proposed meeting.

(Signed) J. CHESTER BRADLEY,
H. T. FERNALD,
E. D. SANDERSON.

The President and Messrs. Sumners and Titus spoke their appreciation of this movement. On motion the report was adopted, and the chair instructed to appoint a committee, which was done as follows: John B. Smith, C. P. Gillette and J. G. Needham.

The President spoke of the history of American entomology, especially of Thomas Say. The "Father of American Entomology" had lived under peculiar conditions; it was recorded that at times he had slept under specimens in the museum and lived on eight cents per day. The speaker exhibited a book which had belonged to Say and was presented to the American Entomological Society by his wife, Lucy W. Say. In this book was the imprint of a butterfly's wing which had been made by transferring the scales on to a pasted surface. The only extant type of any of Say's species was shown. The Academy of

Natural Sciences in Philadelphia had been censured for the loss of Say's types, but in justice to the Academy it was explained that at that time there was no entomologist in Philadelphia, and the Academy had sent the collection to T. W. Harris to be cared for, and while in his hands it was destroyed.

A set of several albums belonging to the American Entomological Society was shown, which contained photographs of very many of the older as well as contemporary entomologists. All were invited to contribute photographs who had not already done so.

Mr. Rehn exhibited some old and rare books from the library of the American Entomological Society and that of the Philadelphia Academy of Natural Sciences.

Mr. Cook stated that the Gundlach collection of insects was in excellent state of preservation in Havana, Cuba. Mr. Cresson and others in Philadelphia had at one time worked on this collection; twenty-three years ago it had been put in hermetically sealed boxes, only a few of which had become broken. There were over 2000 species. The speaker had the proof of a catalogue of the Coleoptera which had never been finally published. Mr. Fox stated that many of Cresson's species were in Poey's collection. Mr. Cook said that that collection was in the University of Havana where were also Poey's fishes.

In speaking of the Comstock-Needham system of wing venation, Dr. MacGillivray stated that Prof. Comstock had been successful in homologising the wing veins in most of the different orders of insects. From the study of *Nemoura* he had derived a hypothetical primitive type of venation, which had closely corresponded with wings observed later. He showed by diagrams the definite way specialization by reduction had taken place, as illustrated by the Radius. In the case of saw-flies the radial sector arises from the base of the stigma while in the higher Hymenoptera it appears to arise from near the apex; but he had recently proven that in reality the base of the radial sector has been lost in all higher Hymenoptera, and the radial cross-vein has assumed its function. Mr. Daecke inquired how this system applied to such orders as Odonata, where the veins were very numerous. Dr. Mac-

Gillivray replied that in that case there had been another type of specialization, by addition, the definite methods of which were just as clearly demonstrable. Dr. Riley said that he had taken up the study of the system with a strong prejudice against it; but as he studied it he had become filled with enthusiasm. He mentioned the successful work that had been done in applying the system to different orders,—by Prof. Comstock in Lepidoptera, by Dr. Johannsen in Chironomidæ, by Dr. Needham in Odonata, by Dr. MacGillivray in Hymenoptera,—and said that their work showed that there was a solid ground work of truth, although details had yet to be worked out in different groups. Dr. MacGillivray stated that Prof. Comstock had derived a classification of the Lepidoptera from their wing venation, which had been corroborated by Mr. Bodine from a study of the scales, Mr. Kellogg from the antennæ and very closely by Dr. Dyar from a study of the tubercles of the larvæ.

Dr. Fernald complained of the inaccuracy and vagueness of the terms used in the question of mimicry. He placed on the board a tentative table classifying those phenomena. A similar table was placed on the board by Mr. Summers. The subject was discussed at length by Messrs. Skinner, Gillette, Bradley, Fox, Riley, Fernald, Summers, Rehn and MacGillivray.

Mr. Washburn spoke upon the attractions of Minnesota for the entomologist.

It was ordered that the minutes be published in both the Canadian Entomologist and the ENTOMOLOGICAL NEWS. The Club then adjourned.

J. CHESTER BRADLEY, *Secretary pro tem.*

At the meeting of the Feldman Collecting Social held December 21, 1904, at the residence of Mr. H. W. Wenzel, 1523 S. Thirteenth St., Philadelphia, ten persons were present.

Prof. Smith spoke of his work in connection with a glossary of entomological terms, and stated that the terms will be more than doubled as compared with the list issued by the Brooklyn Entomological Society some years ago, and will number at

least 5000. He referred to a recent work on insect variation and doubted the value of counting the spots and shape of maculation in 1000 specimens of one variable species. It simply indicated an indefinite variation which students already are aware of.

Discussed by Messrs. Castle, Harbeck and Wenzel, who spoke of the variation of *Cryptocephalus* maculation.

Prof. Smith remarked that in some seasons certain insects are more constant than usual, and that variations are very local.

Mr. Wenzel referred to variation in *Pterostichus*, which bears out Prof. Smith's remarks as to local variation. He also showed a piece of wood from southern Arizona which was perforated by insects. A specimen of *Zygops seminiveus* was found inside.

The incompleteness of analytical tables of species by Le Conte was referred to by Messrs. Wenzel and Smith. To use these tables properly it is necessary to have an almost complete collection of the genus in question, owing to the indefiniteness of most comparisons.

Mr. Harbeck recorded the capture of *Chlorops pulvera* from Fern Rock, Pennsylvania, May 28, 1904, and *Leskia thecata* at Clementon, N. J., September 5, 1904, both new to this region.

Mr. Laurent exhibited a butterfly showing effects of cyanide on the yellow coloring. He had examined the abdomens of 10 specimens of *Prionus laticollis* and found that they contained an average of $383\frac{1}{2}$ eggs.

Mr. Daecke showed a beetle, *Silvanus surinamensis*, which was found commonly in barrels of currants imported from Greece.

Wm. J. Fox, *Secretary*.

A meeting of the American Entomological Society was held December 22, 1904. Dr. Philip P. Calvert, President, in the chair. Fourteen persons were present. The following were elected to serve as officers for the year 1905: President, P. P. Calvert; Vice-President, H. W. Wenzel; Treasurer, E. T. Cresson; Recording Secretary, Henry Skinner; Correspond-

ing Secretary, Frank Haimbach ; Curator, Henry Skinner ; Librarian, J. C. Bradley ; Publication Committee, E. T. Cresson, C. Few Seiss, B. H. Smith ; Executive Committee, Philip Laurent, H. W. Wenzel, Frank Haimbach ; Finance Committee, J. W. McAllister, C. S. Welles, D. M. Castle.

HENRY SKINNER, *Secretary*.

A meeting of the Entomological Section of the Chicago Academy of Sciences was held November 17th, at the John Crerar Library, nine persons present.

Dr. C. F. Adams, of the University of Chicago, took the floor, his subject being "American Dipterology." His talk was of a historical nature, naming the epochs through which the study of American Diptera had passed, its principal devotees and collections, and partly describing the work being done by present students.

Thomas Say, the so-called father of American Entomology, was the first American to write of the Diptera, but nothing of great magnitude or importance was accomplished until Osten-Sacken and Loew, both Europeans, entered the field. Their work extended over many years, and has proved invaluable to later students. Walker, of the British Museum, described a large number of species, but his descriptions were poor and many of the species proved to be synonymous with others previously described. The first real American Dipterist, as Dr. Adams put it, to enter this field of research was Prof. S. W. Williston in 1879. He described three new species in 1880, and published a monograph of the Syrphidæ in 1886. This was the first publication by an American Dipterist of a revisional character and gave new impetus to the study. The first edition of Prof. Williston's "Manual of North American Diptera," appeared in 1888, the latest revised edition, in 1896. Since then Prof. Williston has devoted most of his time and attention to tropical Diptera, and his latest work appears in the "Biologia Centrali Americana."

Present workers mentioned by Dr. Adams include :

Mr. D. W. Coquillett, of the National Museum, an earnest student and prolific writer.

Prof. W. M. Wheeler of the American Museum, N. Y., who has done considerable work in the Dolichopodidæ and Empididæ.

Mr. C. W. Johnson, of the Boston Society of Natural History, who is interested particularly in the Stratiomyidæ and Leptidæ.

Dr. J. B. Smith, whose work among the mosquitoes is well known.

Prof. J. S. Hine, of the University of Ohio, interested principally in the Tabanidæ.

Prof. Aldrich, of the University of Idaho, interested in the Dolichopodidæ and working on a catalog of North American Diptera.

Mr. A. L. Melander, of the Experiment Station, State of Washington, Empididæ.

Mr. C. T. Brues, of the American Museum, N. Y., Phoridæ.

Dr. O. A. Johannsen of Cornell University, Nematocera.

Dr. Adams considers the collections of the United States National Museum, the University of Chicago, Harvard University, and the University of Kansas as the best in the United States. The collection of the University of Chicago consists principally of the former Dr. Hough Collection, and is rich in Muscidæ. The material on Anthomyidæ is very good, having been revised by Stein, a European authority, and returned and includes numerous types. This collection is also rich in Micro-Diptera. In Chicago literature on the Diptera is very complete, as almost every book or periodical on the subject can be found at either the University of Chicago, the John Crerar Library, or in Professor Williston's private library.

Dr. Adams was heartily applauded at the close of his discourse. He was followed by Prof. Williston who added a few words, mentioning Edward Burgess, an American, who wrote on Diptera in 1878 or 1879, before Prof. Williston did and whose collection is now in the National Museum. Prof. Williston also stated that the National Museum contained over 100 types of *Stegomyia*, and he considered it by far the most complete collection of American Diptera.

A. KWIAT, *Recorder*.

EXCHANGES.

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These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted.—*Papilio*s of the world. Must be perfect. Send list and state what you wish in exchange. C. F. Groth, 141 E. 40th St., New York.

Insects of all orders, chiefly from Kansas, Colorado, New Mexico and Arizona, for North American species not in my collection. List of duplicates and desiderata on application. F. H. Snow, Lawrence, Kansas. (Prof. Systematic Entomology in the University of Kansas.)

Wanted, to complete files: Illinois State Laboratory Natural History, Bulletin, Vol. i, Nos. 3 and 4; Vol. iv, articles, 9, 14 and 15; Vol. v, articles 1 and 6. Many valuable exchanges to offer in different groups and subjects. James G. Needham, Lake Forest, Ill.

Wanted to exchange Lepidoptera. Write before sending list.—D. F. Berrenger, Fostoria, Ohio.

A few examples of *Microcyptus testaceus* Lec. for exchange. Desire Cloridae and Cerambycidae.—L. H. Joutel, 164 E. 117 St., N. Y. City.

Lepidoptera.—I have a large number of duplicates for exchange. Also pupæ, including *Triptogon modesta*, and other *sphinxes*. Address Frank H. Engl, 1048 Byron St., Chicago, Ill.

I have a German correspondent anxious to exchange perfectly prepared and named European insects in all families, and orders for American insects. Address and introduction supplied. W. D. Kearfott, 114 Liberty St., New York.

Callosamia calleta cocoons to exchange—*Sphinx* pupæ desired.—W. T. Buxton, 17 Walter St., Somerville, Mass.

Wanted all kinds of native pupæ and cocoons, take also rare plants in exchange for exotic and native butterflies. Chas. F. Timm, 131 Ralph St., Brooklyn, N. Y.

Lepidoptera, duplicates. Fine tropical diurnals from Gilolo, Borneo, Jamaica, Brazil, Peru, W. Africa, Cuba, offered. Wanted desiderata from Haiti, P. Rico, Philippines, Ecuador, Bolivia, Amazon River, etc. Walter Dannatt, 75 Vanburgh Park, London, England.

Lepidoptera.—I have 250 *Luna* cocoons to exchange for others or for exotic butterflies in paper.—M. Reyher, 1601 Willington Street, Philadelphia, Pa.

Cocoons. of *Callosamia cynthia* to exchange for other cocoons of North American moths.—Miss E. Avery, McPherson Library, Indiana Avenue and F. Street, Philadelphia, Penna.

Hemiptera and Hymenoptera from all regions of the earth, mounted or unmounted named or unnamed. Will give for these named and mounted material in other Orders from Southwestern United States, Nicaragua and Cuba.—C. F. Baker, Estacion Agronomica, Santiago de las Vegas, Cuba.

Lepidoptera.—Pupæ and cocoons of native *Papilio*s, *Sphingidæ* and *Saturnidæ* wanted in exchange for pupæ of *Pap. ajax*, *Cresphontes*, *Cith. regalis*, *Anisota rubicunda*, *senatoria*, *stigma* and hibernating larvæ of *Apatura*, *celtis* and *clyton*.—EARNEST JEHEBER, 118 Reservoir Street, Lancaster, Pa.

Wanted.—A good second-hand insect cabinet in exchange for a Haynes Excelsior Guitar in fine condition, with case; original cost \$35.00. Correspondence desired.—C. E. Montgomery, 10 Cabot Street, Portsmouth, N. H.

Pupae *P. cresphontes*, *P. ajax*, *D. hylæus* and other Lepidoptera for exchange. Wanted from original collectors only, Lycænidæ and Hesperidæ of U. S. and Canada with full data. W. W. Newcomb, M. D., 347 Trumbull Ave., Detroit, Mich.

Will collect next season all orders, chiefly Lepidoptera. Former correspondents invited to write. H. A. Kremers, White Bird, Idaho.

For exchange.—Several varieties of catocalæ of this locality for some of other localities. Also a large variety of other moths and butterflies. Dr. A. F. Hyde, Shelby, Ohio.

Loans of Lepidopterous freaks desired for purpose of photographing. Will give prints of same for privilege. Kindly write, stating what you have. I have a number of Entomological works to exchange for other books or N. A. Lepidoptera. Send for list. H. H. Newcomb, 43 Tremont St., Boston, Mass.

Diptera wanted from all parts of North America. Offer in exchange named European Diptera, named Indian Odonata and unnamed species of other orders from India. Could pay small price for collecting it from specially interesting localities. Must be on long pins, unset, in good condition with full data. E. Brunetti, General Post Office, Calcutta, India.

Lepidoptera.—Pupæ of *Phlegethontius quinque-maculatus* and *carolina*, *Papilio philenor* wanted.—George Franck, 1040 DeKalb Avenue, Brooklyn, New York.

Will exchange Californian Lepidoptera for any species of Hepialidæ, American or European, except *H. sequoiæ*, *montana* and *behrænsii*. Will also take imperfect specimens. F. X. Williams, 1015 Scott St., San Francisco, Cal.

Cosmia paleacea and *puncterina* wanted at once from all parts of North Amer. Also *Chrysophanus hypophlæus* from mountain districts, and many common Noctuidæ.—F. H. Wolley Dod, Millarville, Alberta, N. W. T., Canada.

Wanted.—North American Lepidoptera, especially Catocalas and Sphingidæ, also exotic Papilios. Will pay cash or give good exchange. Herman J. Erb, 536 Plum Place, Union Hill, N. J.

Catocala and Moths of Pennsylvania. The undersigned will give good exchange in cash or specimens for the following Catocala: *Caio-cala olivia*, *sancta*, *dulciola*, *mira*, *frederici*, *amæstris*, *rosalinda*, *hermia*, *elda*, *defecta*, and *luctuosa*, or for any moths of Pennsylvania that are new to my collection. Philip Laurent, 31 East Mt. Airy Avenue, Philadelphia, Pa.

Bred specimens of *Paphia troglodyta* and other diurnals in papers, also cocoons of bombycids and pupæ of sphinges for exchange. Wish *sphinges*. R. R. Rowley, Louisiana, Mo.

Lepidoptera: I have some good Noctuidæ in exchange for desirable North American Heterocera. *Xylina*, *Calocampa* and *Plusiæ* especially desired. Henry Engel, Box 35, Oak Station P. O., Allegheny Co., Pennsylvania.

Lepidoptera to exchange for specimens new to my collection. Chas. Krueger, 1162 N. Lincoln Street, Chicago, Ill.

Promethea Cocoons to exchange for Lepidoptera or other cocoons. D. M. Fuller, 221 Lancaster St., Albany, N. Y.

Coleoptera.—*Ptinus fur*, *P. brunneus* and *Lomechusa cava* to exchange for Cicindelidæ. G. R. Pilate, 43 Wrae St., Dayton, Ohio.

Wanted.—North American Bibionidæ for study. Will name and return material sent, for the sake of learning the distribution. W. A. Hooker, care of Dr. H. T. Fernald, Mass. Agl. College, Amherst, Mass.

Exchange.—B. C. Lepidoptera in exchange for high grade guitar, typewriter, 3 A F. P. kodak, 4 B alvista or 5x7 Seneca No. 9 camera or like. Send description and conditions. Theo. Bryant, Wellington, B. C. Can.

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Some New or Little known Aleyrodidae from Connecticut. I.

By W. E. BRITTON, Ph. D., State Entomologist of Conn.

(Plate IV.)

Aleyrodes actææ sp. nov.

Egg.—Unknown.

Larva.—Early stages not found. Specimen examined was about 0.99 mm. by 0.66 mm. Shape oval like pupa case. Color uniform light yellowish green, medio-dorsal region not clouded. Vasoform orifice brownish or slightly darker than the other portion. Segmentation apparent with a median crest on each segment. Surface more or less wrinkled, with no wax rods or papillæ. Larva thin and flat though slightly convex.

Pupa case.—Size about 1.5 mm. by 1 mm. Broadly oval in shape, pale yellow or greenish white near the margin with a medio-longitudinal area of dark brown. Dorsum, especially the dark portion, highly convex, most abrupt at cephalic extremity; marked transversely with rather deep furrows corresponding to the adult segmentation. Each segment has a median crest which is darker in color than the surrounding portion. Marginal area radially corrugated or wrinkled. Margin finely crenulate. A pair of setæ 43μ long at anal extremity, with a second pair 7μ long situated at a distance from the first pair nearly twice as great as the distance between the first pair. Entire dorsal surface shiny, and wholly destitute of papillæ, wax rods or secretion of any kind. A low

wall of wax on the underside, just inside of the margin connects it to the leaf, and remains upon the leaf as an oval ring of wax after the pupa case has disappeared. Vasiform orifice subtriangular, about 80μ long and nearly as broad as long, with angles rounded and sides bulging. Operculum rhomboid-ovate, half the length of orifice, two-thirds as long as broad, base nearly a straight line, sides bulging, apex concavely truncate. Lingula spatulate with a pair of prominent spines or setæ 40μ long, one each side of distal extremity, which is not lobed but obtusely pointed or rounded. A transverse fold or carina reaches entirely across the broadest portion. Free end is densely papillose with short hairs.

Adult.—Wings white, with a two-lobed dusky spot more or less diffused and irregular at the extremity of median vein; the vein is dark grey or black through this area which appears equal on the upper and under sides of front and rear wings. Legs and antennæ yellow. Two rows of prominent spines on the front or under side of hind tibiæ, the length of the spines being about equal to the thickness of the tibia. Eyes divided by wax secretion. Entire insect more or less covered with a mealy or granular secretion of wax. Abdomen bears two latero-ventral tufts of white wax.

Female.—With the characters just mentioned. Length about 1.4 mm.; forewing about 1.63 mm. by 0.88 mm.; hind tibia 0.56 mm.; thorax dark on dorsal and ventral surfaces; abdomen with a suffused dusky spot on dorsum at base; a large brown spot at anal extremity on dorsum, and a small brown oval spot just in front of the large one; and a pair of small dark spots on ventral surface near anal extremity.

Male.—Length about 1.3 mm.; forewing about 1.52 mm. by 0.70 mm.; hind tibia 0.48 mm.; hind tarsus 0.27 mm.; antennæ about 0.41 mm. Spots on wings are less distinct than in ♀. Thorax dark above, yellow beneath. Abdomen yellow without prominent markings, more slender than in ♀ and terminating in the genitalia. Latero-ventral wax tufts smaller than in ♀.

The characters of this insect are shown on the accompanying plate.

Types.—No. 8253 U. S. National Museum.

Cotypes.—Collection of Connecticut Agricultural Experiment Station, New Haven, Conn. Described from 12 ♀, 2 ♂ and hundreds of pupa cases.

Habitat.—Found on the leaves of a single plant of baneberry (*Actæa*) at Mount Carmel, Connecticut, September 24, 1904. Several other baneberry plants growing in the vicinity were examined but not found infested. Collected by Mrs. W. E. Britton.

A striking and handsome species, not resembling any other

that I have seen in the Northern States. It occurs on the under sides of the leaves, seventy-five or eighty larvæ, pupæ and pupa cases being found upon a single lobe of the compound leaf.

Named from the genus of plants upon which it was found.

From a comparison of the descriptions, *actæa* appears to be allied to *aureocincta* Ckll. and *amnicola* Bemis, but I have not examined material of those species. It differs from the former in the markings of the adult, and in the shape of the operculum; it does not have the prong-shaped black markings on the pupa case like *amnicola*. It is also somewhat larger than either of these species.

I am indebted to Prof. A. L. Quaintance of the Bureau of Entomology, Department of Agriculture, Washington, D. C., for examining the specimens and manuscript, and to my assistant, Mr. B. H. Walden, for making the photographs (5 and 6) shown on plate.

DESCRIPTION OF PLATE.

1. Pupa case x 30.
2. Vasiform orifice x 325.
3. Margin of pupa case x 400.
4. Forewing x 46.
5. Larvæ and pupæ on leaf, photographed from dried specimens x 4.
6. Adults, from photograph x 4.

Just One Log.

BY ANNIE TRUMBULL SLOSSOM.

It was a very big log, some twelve feet in length and two feet in diameter. It was of gumbo-limbo wood—*Bursera gum-mifera*—and had evidently been lying where I found it for many months, for the underside was deeply imbedded in the powdered disintegrated coral—or coral-like rock—found along Biscayne Bay. Every new comer notices the gumbo-limbo on his arrival in southern Florida. Its bark is of a deep brownish red, or mahogany color, and the outermost layer, of very thin delicate tissue, flakes off and hangs in loose ragged strips, making the tree an odd and conspicuous object in the tropical hummock.

There was a new bridge built last year over the Miami River, more accessible than the old one and taking one directly into the rich hummock growth so delightful to a naturalist. Across this bridge I went almost daily through the winter and early spring, and one day, in a road or trail cleared through the woods, I found my log. What a treasure house it proved to an entomologist!

At first I feared it was too recently felled, the bark too fresh and hard to be easily examined. But presently I found at one end a loosened fragment of bark which, after some tugging and pulling, I succeeded in removing, and at once my efforts were rewarded. A half dozen specimens of the singular Brentid, *B. anchorago*, were lying there in a sort of mass, apparently half torpid, though the weather was not cold to northern blood. On being stirred up they stretched their long awkward legs and strode away, though in no unseemly haste. This long-nosed, shining, slender fellow is very variable in size, fully as much so as the Cucujid, *Catogenus rufus*. I find specimens not only under bark but on flowers in the bright sunshine. Scores of *Cossonus impressifrons* mingled with the Brentids and the Scolytid, *Xyleborus pubescens*, lay in characteristic galleries near by.

On my knees in the warm white coral powder I gathered in my harvest till my cyanide bottles were well filled and the hour of luncheon approached. Of course I went logging again next day and many to-morrows found me hard at work. Number and variety proved almost inexhaustible and the unexpected was always happening. It was not easy work. The bark was very hard and tough. Blade after blade of my knives snapped as I tried to cut into it, and for weeks my hands were always blistered. Sitting or kneeling there for hours at a stretch I grew stiff and cramped, warm and weary, but I had a beautiful time! A tiny *Europs* ran about in dozens, a little *Sacium* prettily marked and probably an undescribed species was not uncommon and there were two or three species of *Lamophylax*; *L. modestus* the most abundant.

There were also many specimens of a *Ditoma* which I had collected in former seasons under the bark of various trees and

which I had supposed to be a color variety of *D. 4-guttata*. Now I seemed to detect decided differences and have been since assured by good authorities that this is a distinct species, perhaps West Indian if not quite new. One day I found that by digging away the white soil in which my log was embedded I could reach a portion of the underside of the wood where the bark was softer from partial decay. Here I discovered abundant insect life. There were scores of odd maggot-like things which I knew must be Dipterous larvæ. I carried some home to my room with plenty of the soft, moist, decomposed wood in which I found them, hoping to breed the imago and learn its identity. But they all dried up and died. However one morning in March the puzzle was apparently solved when I found several specimens of the tropical Stratiomyid, *Cyphomia marginata*, crawling on the log, their wings scarcely dry. I do not know whether anything has been recorded concerning the habits or life history of this species, nor can I prove indisputably that the "maggots" of which I have spoken were the larvæ of *C. marginata*, but I feel sure of it myself. In this same decayed wood were many small Staphylinids, hundreds of the slender little *Lispinus tenellus*, and among them another seemingly allied species new to me. This proved to be, according to Mr. Frederick Blanchard, a *Hypotelus*, a genus not hitherto recognized, I think, in North America. Erichson described *H. pusillus* from Brazil, which Mr. Blanchard considers very near the Florida species. Dr. Sharp says that the genus is found "under sappy bark."

I sent some specimens of the *Europs* to Mr. Blanchard who discovered among them one specimen of a *Bactridium* sp., which I had overlooked, confusing it with the *Europs*. I found also among the specimens of *Cossonus impressifrons* a small black species of the same genus, *Cossonus*, which appears to be undescribed, though it may possibly be West Indian.

When cramped and aching from my uncomfortable position on the ground I often changed my posture and seating myself on the log rested in the sunshine. Then I saw many things I should have missed had I kept to my cortical collecting. A pretty little *Physalis* or ground-cherry, of the nightshade

family, grew all about me. This proved to be the food-plant of a tropical *Lema*, the *confusa* of Chevrolot, a pretty orange and black beetle, and I gathered many specimens. Deer flies—*Chrysops flavida*—buzzed about my head, shining golden-green Dolichopids alighted on the leaves near by, and one morning a gorgeous fly of metallic blue came to my very hand, allowing me to capture it and learn that it was *Microdon scitulus* Will. Even Lepidoptera sought out my log, rare species too. One hot noon as I sat resting there before starting homeward I saw an oddly shaped object of silvery white, touched with black, on the smooth red bark at my side. Bending to examine it I found it was a small moth with folded wings and placed a cyanide bottle—quickly emptied for the purpose—over it. It was a fine fresh specimen of *Mieza igninix*, the pretty moth of Yponomeutidæ, whose curious larva I was so fortunate as to discover at Punta Gorda years ago (Jour. N. Y. Ent. Soc., Vol. IV, p. 86.) A small tree, the red bay—*Persea catesbyana*—grew just within reach of my hand as I sat there and one day I pulled some of the aromatic leaves to rub between my fingers while I sniffed the spicy odor. As I did so a larva dropped into my lap, an odd looking thing, with forward portion near the head swollen and enlarged. Searching I found several others and carried them home. They fed well, pupated, and in early April became moths of the species *Bronchelia hortaria*, a handsome Geometer.

Hymenoptera also, Hemiptera, Odonata, Orthoptera all, at one time or another, visited me at my log cabin and met with a warm soothing welcome there. That singular little Gryllid or cricket, *Mogosiplistus slossonæ*, ran swiftly away as I lifted the bark under which it lay hid, spiders crawled off from dark corners, hundreds of mites crowded thickly together there, and ants of two or three species seemed to have their abode in wood or bark.

Among the mites were some small roundish black creatures which I at first took to be also *Acarina*. But on examination they proved to be beetles, and Mr. Blanchard identified them as *Acritus atomus* Lec., a Cuban species, not previously recognized in our fauna.

Do you wonder that day after day of the winter and early spring found me at this happy hunting ground and that when I am remembering the busy hours in far off Miami and wishing, now it is too late, that I had kept a fuller record of my field work there, a journal, a calender, a daily diary, I satisfy my New England conscience by saying to myself in nautical phrase, "Well, at any rate, I kept a log."

Notes on some Californian Buprestidae.

By H. C. FALL.

One of the rarest and finest of the Californian Buprestides is the beautiful green *Dystaxia murrayi*. This species is rather widely dispersed in the southern part of the State, occuring on live oaks both on the desert and seaward sides of the mountains, but is not often taken by collectors. Imagine then the satisfaction of the writer when on a visit to Dr. F. E. Blaisdell of San Francisco, the Doctor in exhibiting his treasures opened a box containing a fine series of *Dystaxias* taken by himself at San Diego, from which he generously selected a set for my own collection. On placing the new specimens beside my single previous example I noticed that they were of a somewhat more brilliant green but made no further comparison at the time. Later my attention was called by Dr. Fenyès to the fact that Blaisdell's species, of which he had just obtained specimens, did not agree with his supposed *murrayi*, and a very brief comparison sufficed to show that they were indeed unmistakably distinct, though superficially remarkably similar.

On examining the series of *Dystaxia* at the National Museum the past summer, the new species was found as I had anticipated, mixed with *murrayi*, and it is not unlikely that it stands thus in other collections. It may be briefly characterized by comparison with *murrayi* as follows :

***Dystaxia elegans* n. sp.**

Very similar to *murrayi* in size, form, color and sculpture, but when compared more attentively the present species is seen to be slightly smaller on the average, the color a more brilliant green, the elytra widest

more posteriorly, the fine, soft, erect, whitish pubescence of the upper surface a little longer and more evident. Antennæ (♂) fully attaining the middle of the elytra, pale at base, blackish and distinctly serrate from the fifth joint, the triangular joints strongly compressed, gradually increasing in width to the seventh or eighth, then decreasing in width to tip, the wider joints nearly as wide as long. In the female the antennæ are much shorter, not passing the humeral umbone, but the joints though narrower are proportioned nearly as in the male. In *murrayi* the antennæ are nearly filiform in both sexes, the outer joints (5-11) very feebly serrate, mutually equal in width and nearly three times as long as wide. There is the same sexual difference in length, and the outer joints are blackish as in *elegans*.

In the "Transactions," 1893, p. 137, Horn describes the genus *Glyptoscelimorpha* and takes the opportunity of presenting the differential characters of the *Schizopini* to which the genus belongs. The three genera comprising the tribe are there separated as follows :

Antennæ slender, nearly filiform, scarcely at all serrate.

Claws entire at tip, slightly thickened at base ; last joint of antennæ nearly one-half shorter than the tenth . . . ***Glyptoscelimorpha*.**

Claws cleft at tip, last joint of antennæ very little shorter than the tenth. ***Dystaxia*.**

Antennæ flattened, the joints 4-10 broader than long and distinctly serrate ; claws cleft at tip ; last joint of antennæ oval, longer than the tenth. ***Schizopus*.**

From the above table it would appear that a mistake had been made in referring *elegans* with its flattened serrate antennæ to *Dystaxia*, and that it would more properly be placed in *Schizopus*. *Murrayi* and *elegans* are, however, too nearly identical in every feature of structure and facies, with this one exception, to warrant their assignment to distinct genera. The table given by Horn must then be modified, and in so doing attention should be called to an extraordinary character, which somewhat curiously escaped both Le Conte and Horn. In *Dystaxia* and also in *Glyptoscelimorpha* the antennæ are 12-jointed ; in *Schizopus* they are 11-jointed, as indeed they are in every other known genus of the *Buprestidæ* if we may depend upon Kerremans, who so describes them without naming any exceptions in his late work on the family in Wytzman's Genera Insectorum. These three genera may then be more properly characterized thus :

Antennæ 12-jointed, attaining the middle of the elytra, at least in the male.

Claws simple, last joint of antennæ two-thirds as long as the eleventh.

Glyptoscelimorpha.

Claws cleft at tip; last joint of antennæ barely visibly shorter than the eleventh. **Dystaxia.**

Antennæ 11-jointed, stouter, scarcely passing the hind angles of the prothorax in either sex; last joint a little longer than the tenth; claws cleft. **Schizopus.**

The fourth and fifth joints of the antennæ in *Schizopus* are both longer than wide in the only specimens at hand, and not wider than long as indicated by Horn.

It is pertinent to say in passing that Kerremans in the work above cited has badly bungled the characters of this group, the antennal characters of *Schizopus* and *Dystaxia* being interchanged, while the antennæ of *Glyptoscelimorpha* are said to barely reach the middle of the pronotum. Such mistakes are especially unfortunate in a work of such (supposedly) high authority as that of the Belgian specialist.

POLYCESTA.

There can be no doubt that the Texan *P. elata*, now recorded on our lists as a variety of *californica*, should be restored to specific standing. The former differs from the latter quite constantly in its more obviously concave front, finely carinate median thoracic impression, slightly less obtuse hind angles of the prothorax and the less densely more unequally punctate intercostal interspaces of the elytra. In addition to the above differences, which were given by Le Conte, the formation of the last ventral segment is conspicuously different, being angulate at tip in *californica* and lobed in *elata*.

Our third species—*velasco*—differs somewhat from both the above in the sculpture of the upper surface as heretofore described, but a more important means of separation exists in the first ventral suture. Our species are separable as below:

First ventral suture broadly rather strongly posteriorly arcuate; prothorax with a strong median and well defined lateral impressions; elytra strongly costate.

Apex of last ventral angulate at middle, the sides of the angle scarcely sinuate. **californica.**

Apex of last ventral produced in a nearly parallel-sided lobe which is obtusely rounded at tip. **elata**.
 First ventral suture straight; prothorax without well defined lateral impressions; the alternate elytral intervals only slightly more elevated. **velasco**.

The form of the last ventral does not vary much in the sexes of *californica* and *elata*, though the apical lobe is a little less prominent in the female of the latter species. In a male of *velasco* from Yuma, California, the last ventral is sinuate and subacuminate at apex; while in a female from Texas it is angulate. I unfortunately have not both sexes from the same locality. In a female from Oak Creek Canon, Arizona, recently submitted by Prof. Snow, the last ventral is more acutely angulate and the elytral costæ more pronounced. This is possibly a distinct species, but more specimens of both sexes should be seen before passing judgment. It is not possible at this time to express any opinion as to the validity of *P. cavata* Lec. and *P. obtusa* Lec. The former, described from Alabama, has been placed as a synonym of *elata*; and the latter, described from Philadelphia, is referred to *velasco*.

Recognition of two North American Species of Cicada Latr.

BY P. R. UHLER.

1. *Cicada townsendii* n. sp.

An unusually robust form appearing to be closely related to *C. montezuma* Dist. Color of head and pronotum greenish (fading to pale tawny), marked with black; the ground color of mesonotum and tergum brownish black, marked with reddish brown and greenish, the middle and submarginal curved lines being green and powdered with white bloom, as is also the surface beneath. Head stout, as wide as the front of pronotum, if the obliquely set eyes be included; front tumidly prominent, black, having a pale line down the middle and a spot of the same color each side, superiorly, and a larger pale spot on the cheeks, sulcations of the cheeks obliquely and deeply grooved; the rostrum extending behind the middle coxæ, the eyes prominent. Pronotum greenish, or pale tawny when dried, the posterior border with a greenish band and the anterior margin more narrowly greenish, a large triangular black spot is on the middle back of the front margin, and on this a short greenish, longitudinal line runs back a little more than half the length, each side of the black

are two uneven pale spots, followed outwardly by larger spots between the dark sutures, and nearer the sides are two long curved pale lines; the lateral margins are broadly curved, greenish, bluntly rounded on the anterior angles and almost rectangular on the basal angles, the posterior margin is strongly curved, the sutures mostly black. Mesonotum piceous black, sometimes tinged with rufous, the middle line pale greenish or tawny, sometimes obsolete, on each side of this are two short, pale curved lines, and still further outwards two longer pale curved lines, and the lateral border usually pale, all of these lines are commonly covered with whitish bloom; flaps behind the crux broad uniform, pale greenish, covered with bloom. Wing-covers sometimes tinged with whitish, moderately ovately, but not acutely rounded at tip, costal vein flat, thick, pale green, or testaceous, veins from base to end of middle series pale green, apical series dark brown, the areoles mostly large and wide, the costal areole short and wide, widest about one-fourth from the apex, terminating in an acute triangle, basal areole five-sided, longer than wide, comparatively long, areoles of the discoidal series long and wide, placed very moderately oblique, slightly infuscated apically, those of the apical series wide and not very long, mostly acutely triangular at base, the basal vein of the second areole strongly twice bent; areoles of the wings long, not much curved, widening apically, the second-vein forking widely towards the outer end. Underside of body greenish, tinged with piceous, or fulvous tinged with green. Exterior valves of the male white or pale greenish, sometimes dusky at base covering a little more than one-half the length of the venter, each valve obliquely narrowing on the inner border, and formed less obliquely on the outer border, overlapping a little at base. Margins of the abdominal segments pale brownish. Legs green or pale brownish, piceous at tip of tarsi, including the nails. Length to tip of abdomen 27-30 mm. Width of base of pronotum 13-14 mm. Expanse of spread wings 98-100 mm.

Seven specimens, three of which were males, have been in my charge for examination. A pair of these were collected in Arizona, not far from the Mexican border, by Dr. Edward Palmer, and four others were sent to me by Mr. C. H. Tyler-Townsend, from the vicinity of Las Cruces, New Mexico.

The density of white bloom upon the surface of these insects, particularly beneath, so hides the surface that the pattern of marking is almost unrecognizable.

The mesonotum is particularly convex and the almost concurrent high curve of the abdomen has the effect of causing the wings to appear placed at an unusually low level.

Upon clearing off the bloom from one of the specimens the markings are disclosed as follows: tawny lines form two loops

arising from the fore-margin and exterior to these, each side, is a longer loop of the same color, the crux being also pale fulvous. One male from Arizona is much smaller than any other specimen, and the valves over the drums are narrower and unsymmetrical.

2. *C. grossa* Fab.

This species has recently been brought to light in the British Museum, where, through the courtesy of Dr. G. R. Waterhouse, I was permitted to examine the types of Fabricius in the collection of Sir Joseph Banks. They proved to be two specimens of the large form, of which I have specimens from North Carolina, Arkansas, Texas, Kansas, New York City, northern New Jersey, Maryland and Virginia. These largest females have been taken in North Carolina, Arkansas, Texas and southern Missouri; those which I have met with in the Atlantic States north of North Carolina are in varying degrees smaller. When collected in alcohol, their green color becomes rusty or dark brown. This last is the color to which Fabricius has given the term *niger*. These types were reported to have come from Brazil; but no collector has thus far found the species in South America, nor has it been met with in the West Indies or Central America. Incorrect localities for species in the collections of authors of the last century have been frequently remarked, as better knowledge has accumulated.

Variations in size, color and pattern of marking are, perhaps, responsible for the exaggerated synonymy which has accumulated upon this species. The synonymy stands as follows: *Tettigonia grossa* Fab., Ent. Syst. iv, p. 16, Syst. Rhyng. p. 33, No. 2; *Cicada marginata* Say, Journ. Acad. Nat. Sci. Philada. v. iv, p. 330; *Cicada auletes* Germar. Silbermann, Rev. Ent. v. ii, p. 65; *Cicada grossa* Germar. Thom, Ent. Archiv. v. ii, p. 5; *Cicada trupsilon* Walker, Brit. Mus. List. Homopt. v. i, p. 103; *C. resonans* Walk., Brit. Mus. List. Homopt. p. 106; *C. consonans* Walk., Brit. Mus. List. Homopt. p. 106; *C. vibrans* Walk., Brit. Mus. List. Homopt. p. 107 C.

The synonyms of Mr. Walker are given on the authority of Dr. Stål, as I did not have the time to examine those speci-

mens in the British Museum. I feel much doubt as to the one which is recorded as from the West Coast of America. Certainly, the Pacific coast of either America would be decidedly unsuited to the nature of this insect, which lives on the roots of our forest trees in the loam of the Piedmont Belt and that of the Mississippi plateau country.

A New Species of *Entomobrya*.

BY H. J. FRANKLIN, B.Sc.,

(Plate V.)

Massachusetts Agricultural College, Amherst, Mass.

Entomobrya albicollis sp. nov. To the unaided eye the adult insect appears to be very dark in color with a light band across the dorsum of the body just posterior to the head. This species is very variable in its coloration in different stages, and the adults also seem to vary somewhat in this respect. The anterior portion of the body, as well as the head, seems to be very constant in its coloration, there not being a single specimen among all the adults and young as well, which I have examined which departs very far from the typical coloration seen in the adults. The long fourth segment of the abdomen, however, may appear light brown or yellow.

Under the microscope, the insect has quite a different appearance, especially as regards color by reflected light from that which it has by transmitted light.

By reflected light in bright sunlight the head appears light translucent brown with dark eyespots connected more or less with each other, and with the side margins by dark irregular bands. Mesothorax of same color as head but with a thick hypodermal pigmentation of pure white, anterior margin very dark. Metathorax, as well as first three segments of abdomen, with the exception of their very narrow anterior edges, dirt brown in color. Fourth segment of abdomen sordid brown with a slight tinge of blue, its anterior border marked with large, light yellow, elongate-oval spots the anterior ends of which coalesce more or less to form an irregular light yellow anterior margin; fifth and sixth segments of same color as fourth, the fifth with a conspicuous light yellow spot on each side near the anterior margin—in this respect resembling *E. bicolor* Guthrie. Antennæ very variable, as a rule, with the first three segments ferrugineous, a little lighter toward the tips which are rather dark ringed; terminal segment lighter. Legs quite constant, with femora and trochanters blue, tibiæ very light yellow, the anterior ones occasionally spotted somewhat with blue. Manubrium of same color as femora, lighter at distal end. Dentes very light yellow with a slight tinge of brown at the base, yellow fading out toward the apex.

By transmitted light, the dark band connecting the eye-patches with each other and with the margin of the head as well as the dark anterior margin of the mesothorax and all the parts of the remaining portion of the body appearing brown by reflected light become deep blue. The terminal segment of each antennæ appears light blue by transmitted light.

Antennæ about three times as long as the head or one-quarter shorter than the body without head and furcula; relative length of the segments, on the average, as follows: $\frac{1}{3}$, $\frac{2}{6}$, $\frac{3}{7}$, $\frac{4}{6}$.

Legs slender, of about the same length as the antennæ, with tibiæ considerably longer than femora, each tibia bearing one long clavate hair near the tip. Large claw of tarsus, bearing three teeth within, all on the distal half, the one nearest the middle being much the largest, the other claw unarmed and lanceolate. Dentes, as usual, in the genus, serrate beneath. Mucrones provided with three teeth, a stout middle and distal one and a very slender basal one, all acute pointed. Each mandible with four teeth at the cutting tip and a many-toothed grinding surface.

On the surface of the body as a whole there are found three kinds of hairs: first, small simple hairs which are scattered over the entire surface of the body and all the prominent appendages except the dentes and mucrones; second, spinulose hairs which are apparently the only kind borne on the dentes and mucrones, which surround the base of the manubrium and are found mixed with the simple hairs on its surface, and which are also very sparsely scattered over the body, legs and antennæ being somewhat numerous about the bases of the latter and on the frons; third, large hairs which appear truncate at the tip, being somewhat thickly placed on the dorsum of the body, especially of the thorax, and which are densely covered with hairs on the truncate surface and on the side of the truncation.

There seems to be considerable variation, according to instar, in the relative lengths of the third and fourth segments of the abdomen. It is difficult to state the typical size of an adult of this species; it seems, on an average, to be about 1.75 mm. in length. I have one specimen 2.25 mm. in length.

Described from nine cotypes, three of which I have retained and of the remaining six deposited three in the U. S. N. M. and three in the collection of the Massachusetts Agricultural College.

This species has been found in considerable numbers under the bark of the Sycamore throughout the year at Amherst, Mass. The young were always present, but seemingly more abundant during August and September.

During the summer of 1903, I found a large number of

specimens of *E. ditellaria* Guthrie on a pile of lumber located beneath a clump of pine trees (*Pinus rigida*) in Amherst.

EXPLANATION OF PLATE V.

(all figures greatly enlarged).

Fig. 1.—End of furcula.

Fig. 2.—Ocelli of left side.

Fig. 3.—One of the tarsi.

Fig. 4.—Ventral aspect of the apex of the left mandible.

Fig. 5.—Dorsal aspect of the distal half of the left mandible.

Culex brittoni n. sp.

BY E. P. FELT.

Culex brittoni n. sp.—Female.—Proboscis over half the length of the body, dark brown, minutely flecked with gray scales, apex yellowish gray. Palpi distinct, 5-segmented, basal two subglobular, the first very dark brown, the second brown, both sparsely clothed with hairs; third to fourth thickly clothed with scales and ornamented with rather sparse, long hairs; third joint yellowish, fourth and fifth dark brown, the latter yellowish at apex. Antennæ filiform, dark brown, rather thickly clothed with short, grayish hairs and with sparse, basal whorls of long setæ. Eyes dark brown or black, rather coarsely granulate. Occiput rather sparsely clothed with short, curved, yellowish scales and with numerous long, curved, black fork scales. Mesonotum with a pair of subdorsal, light brown, naked stripes extending to the posterior third, the median line and the lateral areas and posterior portions being dark brown and clothed with sparse, long, black bristles and numerous finer, golden yellow ones. Laterally there are a few longer, yellow bristles. Scutellum grayish, sparsely clothed with light golden yellow, curved scales, a few longer ones posteriorly, and its posterior margin crowned centrally and laterally with long, black setæ, those on the sides forming distinct groups; patches of similar setæ occur at the base of the wings. Metanotum yellowish, smooth. Halteres yellowish, transparent. Abdomen clothed with very dark brown, almost black scales with distinct basal bands of yellowish white scales, those of the second and following segments being slightly broader than the others. Ventral surface of abdomen yellowish. Wings rather large, venation distinct, scales very thick, brownish, almost black along the costal margin, fringe slaty gray. Petiole of anterior fork cell about one-half its length, that of the posterior fork cell shorter and a little over half the length of its cell. Posterior cross vein about its own length from mid cross vein. Basal third of the third longitudinal vein with most of the linear scales appressed. Outer portion of fringe composed of scales of several lengths, giving a distinctly uneven border. Coxæ and basal portion of femora yellowish white, the posterior portion

of apical part of femora, the apex and posterior portion of tibiae, its apex and posterior portion of the first tarsal segment, its apex and base of second and the apices of the third and fourth silvery yellowish; other parts dark brown. Tarsal claws simple. Length of body about 5 mm., wing spread about 10 mm.

Described from a single well marked specimen taken by Mr. H. L. Viereck, at Branford, Conn., June 27, 1904.

This species presents a somewhat general resemblance to *Culicada cantator* Coq. It may be at once separated therefrom by the simple claws and the peculiar character of the wing fringe as noted above. It is also a much more distinctly marked species.

Note on the finding of *Ptinus fur* and *brunneus*.

BY G. R. PILATE, Dayton, Ohio.

On November 11, 1902, I found a few small Coleoptera on a stick of wood I pulled out of a corner in my wood-shed. I am only a beginner in the collection of Coleoptera and do not know much about them, so I did not know what they were, but thought I would look and see if I could not find a few more. The corner of the wood-shed where I found them had not been disturbed for two years or more, as I had no use for the kindling that was piled there. I went to work to clean it out, and found all the sticks and boards covered with the beetles. In the far corner I found an old barrel in which the rats had made a nest. There was about half a bushel of rat dirt mixed with a lot of old paper and rags. When I dumped this out on the floor, the beetles fairly swarmed out of it. Being so many I took it for granted that they were common and not worth bothering with. So I gathered about a hundred and swept the rest out on the canal bank. That night there was a heavy rain, and when I came to look for them a few days after, dirt and all were washed away. Mr. Charles Dury of Cincinnati identified them for me, and told me what I had missed in not taking more of them. Without exaggeration, I know I would have taken two thousand or more. I was going to take up the floor of the shed and look under it, but my wife was taken sick and I had no time to think more of them. The next May I took a few stray specimens crawling about the shed.

Three New Bees from the Southwest.

By T. D. A. COCKERELL.

Anthophora corvicolor n. sp.

♀—Length 18 mm.—Coal-black, with rather short black pubescence, except that there is a little inconspicuous pallid hair just above clypeus, the hair on hind part of occiput is chocolate-brown (but that on vertex black), that on pleura and legs inclines to a sort of dark purplish brown (the color of some myxomycetes), while that on the outer surface of the hind tibiae and the base of their tarsi is a rather sordid white. The sides of the abdomen are distinctly æneous, or greenish, as in some species of *Andrena*, and the hind margins of the abdominal segments are rather narrowly rufous; the femora are dark reddish, the hind femora brighter. Facial quadrangle broader than long; clypeus well punctured, the punctures of various sizes; labrum rugoso-punctate, with a keel on the lower half; antennæ entirely black; mesothorax minutely roughened and dull, not obviously punctuate; scutellum with a median longitudinal shining raised line; upper margin of postscutellum reddish; tegulæ rufo-piceous; wings only slightly dusky; pygidial plate of abdomen narrow.

Hab.—Laurel Canon, California, May, 1893 (Dr. A. Davidson.) Quite unlike any other described American *Anthophora*; it looks like an overgrown *Emphoropsis infernalis*. It is worth while to record that Dr. Davidson has also collected *A. gohrmanæ* Ckll., at Los Angeles.

Emphoropsis murihirta n. sp.

♂—Length about 13 mm.—Similar in appearance to *E. floridana* from Florida, with the pubescence similarly arranged and of the same color; but differing as follows:

- (1.) The hair of the mesothorax has black hairs intermixed.
- (2.) The clypeus (of about the same shade of pale yellow) has the lateral margins broadly black. The labrum and scape, as in *floridana*, are wholly black, but the former is covered with white hair.
- (3.) The lateral face-marks are reduced to a narrow stripe ending in a hood, thus recalling *E. miserabilis*, but that has the light color of clypeus subtrefoil-like.
- (4.) The legs are brown, not black, and their pubescence is white, except on inner side of tarsi, where it is brown, and on the hind legs, where some black hairs are mixed with the white.
- (5.) The abdomen, beyond the first segment (which is clothed like the scutellum) has the hairs (which are erect) partly black and partly pale, the black ones mostly short; and the ventral surface has much long white hair. The pygidial plate is surrounded with light hair.
- (6.) The wings are a trifle clearer; the second submarginal cell is large, broader than long.

What seems to be the female of this species is similar in appearance but much more robust, with the face wholly black, and the hair on the legs nearly all black.

Hab.—Los Angeles, California, one of each sex. (Dr. A. Davidson.)

***Megachile agustini* n. sp.**

♂—Length about 14 mm.—Appearance of *M. comata* Cress., with the same pale greyish greenish pubescence. It is also much like the male of *M. latimanus* Say, but with the banding of the abdomen rather more distinct. The distinctive characters are as follows :

(1.) The entirely black antennæ have the flagellum slender, not crenulated beneath, and the last joint is flattened and discoid.

(2.) The mandibles are normal, not broadly dilated or elbowed as in *comata*, and are entirely black, except an obscure dark red patch not far from the apex. The apical tooth is sharp and rather long.

(3.) The spines of the anterior coxæ are comparatively short and somewhat flattened, with an orange line on the outer edge ; the anterior faces of the coxæ present large patches of appressed orange rufous bristles. (In *latimanus* there is a pallid spot, but no patch of bristles ; in *comata* the coxal spines are very long.)

(4.) The anterior femora are dark rufous, with broad black stripes in front and behind ; the lower margin is dilated to a keel on the apical half, but the black curved lines seen on the lower margin of *latimanus* are wholly absent.

(5.) The anterior tibiæ are black and red, with much the pattern of *comata*, but the red on the inner face forms a longitudinal instead of an oblique band.

(6.) The anterior tarsi resemble those of *comata*, but are a decided yellow, and the long posterior fringe is dark fuscous within ; seen from beneath, the first joint is not hollowed as it is in *comata*, and the anterior fringe is rufous, not dark. There is a conspicuous black spot on the lower side of the second joint beneath. There is no concavity of the apical part of the upper edge of the first joint, such as is seen in *latimanus*.

(7.) The middle and hind legs are nearly normal, with the femora broad, but not greatly swollen ; middle tibiæ short and thick, convex outwardly ; middle tarsi, especially the first joint, fringed behind with long white hair ; hind tarsi with first joint flattened, the next three cordiform, hair on inner side rather pale orange-rufous, with long but not dense white hair laterally in front.

(8.) The fourth and fifth dorsal abdominal segments, viewed laterally, show some black hairs. Apex of abdomen broad, irregularly crenulate, but the emargination is very slight or obscure. Beneath, the last ventral segment is tridentate, with the middle tooth small.

From *M. fortis* Cress., it is separated by not having the

anterior edge of the first joint of anterior tarsi "sharply carinate and blackish," the shorter coxal spines, etc.

From *M. nevadensis* Cress., it is separated by the color of the pubescence, the character of the last ventral segment of the abdomen, etc.

Hab.—Pecos, New Mexico, Aug. 30, 1903 (Cockerell); Los Angeles, California, (Davidson.) Named after Agustin Pecos, the only surviving member of the Pecos tribe of Indians.

Notes on *Mixogaster Breviventris* Kahl.

By J. R. DE LA TORRE BUENO.

Mixogaster breviventris was described in the Kansas University Quarterly for 1897 from one specimen taken in Kansas. In going over some Diptera taken by me near New York, my friend Mr. Charles T. Brues saw an extremely peculiar *Syrphid* which he took with him for study. It turned out to be this species. In a letter to me he called attention to the peculiarities of the genus. *Mixogaster* is essentially tropical or subtropical and its appearance in Kansas, and in this more northern region is quite remarkable. My two specimens were taken at Mosholu, N. Y., one on July 25th and the other on August 8, 1903. Both individuals were flying in and out among the stems of low-growing bushes in a manner so extremely like a wasp that I mistook them for one of the latter. When in the net they fluttered their wings and extruded their terminal abdominal segments in a startlingly wasp-like fashion, exactly as if they could sting. In coloration and form they resemble one of the smaller black and yellow wasps.

For the information of specialists I may say that Mosholu is the name of a station on the New York & Putnam R. R., and is a part of Van Cortlandt Park in New York City.

I HAVE raised out of nine pupæ of *Sphinx luscitiosa*, the var. *una*, ♀, but only one. The eight others were of natural color. I have seen Mr. Keller's specimen and the one I have is even darker than his. This makes three specimens all together and the first one in the State of New Jersey.—PROFESSOR WORMSBACHER.

This is a Joke.

The student of nomenclature is duly warned in advance that the species described herein is a fake and a hoax. If there is one thing more than another that jars the writer of this article it is to get an exchange list of some thousands of numbers which it is necessary for him to translate into *Danaus plexippus*, *Colias philodice*, *Vanessa antiopa*, *Platysamia cecropia*, *Deilephila lineata* and *Pamphila cernes*, etc., to find out there is not one miserable thing he wishes. His good friend in the western part of the Keystone State dotes on numbers, and nothing agrees with him more than the reception of one of Prof. S——s exchange lists. Knowing he had all the numbers ever described, with fear and trembling, I asked him to



N^o 1345763.

send me a specimen of number 1,345,763, never expecting to get it. A few days after came a letter containing the following. "No doubt you have ere this concluded that I have forgotten your request for a specimen of number 1,345,763, but such is not the case. I have been very busy getting my duplicates in shape, lists made out, and shipping and receiving sundry other *numbers*. I have found time this morning to pack and ship the above number to you, and trust it may

arrive safely and prove an acceptable addition to your collection of *Rhopalocera*. While it is unique, your kindness to me in the past justifies my placing it in your charge, and I have no doubt you will value it more highly than I do." I never expected to get it and have thus been rewarded after all these years. It is now in a fire-proof building, and is the joy of all visiting naturalists who are privileged to gaze upon it. Its beautiful yellow and black primaries and red secondaries make it an object of great beauty, and I trust no ubiquitous *Anthrenus* will keep it from being a joy forever.

WEST VIRGINIA. MOUNTAIN BUTTERFLIES.—During August 1904, in company with a party of collectors, I camped for a week on one of the higher mountain ridges of the great forest region of central West Virginia.

The elevation of our camp was about thirty-five hundred feet above sea level, and from there I made frequent trips to the Cranberry River which flowed at the foot of the mountain twelve hundred feet below. This stream has its origin in, and runs its course of more than fifty miles, through an unbroken forest rarely penetrated by anyone except hunters and fishermen. At the points where I visited the river wild flowers were growing upon the banks in abundance and swarms of butterflies were gathered about the Swamp Thistle, (*Cirsium muticum*), Virgin's Bower (*Clematis virginiana*), Oswego Tea (*Monarda didyma*) and Joe-Pye-Weed (*Eupatorium purpureum*) which were blooming in the greatest profusion. I have never seen *Papilio philenor* so abundant elsewhere, and *Argynnis aphrodite* and *Argynnis cybele* were present by hundreds. Here was a rather unusual collection of northern and southern forms. On August 15th, four species of *Argynnis* were taken (*atlantis*, *aphrodite*, *cybele* and *diana*). One specimen only of *atlantis* was secured and two of *diana*. All fresh males.

Below is given a list of the species of butterflies collected during my stay in the woods:

Anosia plexippus.	Basilarchia astyanax.
Argynnis diana.	Basilarchia disippus.
Argynnis cybele.	Feniseca tarquinius.
Argynnis aphrodite.	Chrysophanus hypophlaeas.
Argynnis atlantis.	Lycaena pseudargiolus neglecta.
Brenthis bellona.	Lycaena comyntas.
Phyciodes tharos.	Pieris protodice.
Grapta comma.	Pieris rapæ.
Grapta faunus.	Colias philodice.
Vanessa antiopa.	Papilio ajax.
Pyrameis atalanta.	Papilio troilus.
Pyrameis huntera.	Papilio philenor.

F. E. BROOKS, Morgantown, Virginia.

Life History of *Lemonias virgulti*.

By J. G. GRUNDEL, Alma, Santa Clara Co., Calif.

The female deposits its eggs on the stems and leaves of its food plant, a species of *Eriogonum*, near the ground; also on grasses and other weeds near by, singly and in groups of four and five. She doesn't seem able to fasten all the eggs as fully one-half are dropped on the ground. The egg is a flattened globe of a bluish color, with a shallow depression in the center and the whole is covered with small depressions very much like a thimble. They are not so deep in the micropyle, and the edges of all are surrounded with lancet-like projections. The egg is laid in August to September, and the larva emerges the following February. The young larva feeds on the upper side of the leaves, but when half grown, it feeds only on the outer bark of the stems, and at night only, hiding during the day among the dead leaves and roots close to the stems. When full grown it is $\frac{7}{8}$ inches long by $\frac{3}{16}$ in diameter, color dark slate; abdomen red brown and legs red. On each side, next to legs, ten yellow spots with tufts of short black hair, mixed with long white; the next rows have no spots, but only short tufts of black hair shorter than in the first rows; the next rows have yellow spots with black hair and one white hair in center of each tuft. Head black, covered with short hair. The larva is a very small eater, and acts similarly to that of *Chrysophanus gorgon*. It fastens a number of dead leaves together with a very thin white web in which it rests when not eating, and in which it also goes into chrysalis. The fly emerges in about one month, and will feed only on the flowers of its food plant. The female pupa is as large again as the male, and is covered with a thin down, the empty larval skin remaining on the anal end of the pupa. The fly is very plentiful, and local in the Santa Cruz mountains, and is to be found only on very hot roadsides.

General Notes.—Last July while visiting a neighboring mountain, I saw thousands of larvæ of *Deilephila lineata* feeding on all kinds of grasses and herbs, and I am very much afraid they will be a pest in our vineyards, as they were about fourteen years ago.

Our San Jose scale that has been a pest in our orchards has all disappeared. The brown apricot scale is all gone (thanks to the little *Comis fusca*), and the black scale on our olives is going fast, from what I don't know; perhaps the hot weather last summer had something to do with it.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—Ed.

PHILADELPHIA, PA., MARCH, 1905.

One of our best friends, an old NEWS subscriber, a well known entomologist and an all round good fellow generally, lately informed us that the NEWS index was very incomplete, and that he had instructed his assistant to make a complete index of the volumes. This criticism was like a Thunderbolt from a clear sky, as we were laboring under the impression that we always erred on the safe side in its preparation, and that our index was a model of what an index should be. A good index is the outcome of common sense and judgment; a perfect index may be considered to be a repetition of the entire contents, and a very bad index is the almost total absence of any at all. The happy medium lies between these two extremes. Take up last month's NEWS and look over its pages with a view of indexing it, and you will notice many things that are of no importance in an index, and if put in would only impose a useless burden on the compiler, and entail a useless expense on the Journal. Turn to page 33 for example. The index might read Exotic Butterflies—someone might want to know that they are in the collection of the Academy of Natural Sciences of Philadelphia. Someone wishing to have specimens figured might like to know what plate makers made them. Some would probably like their names in the index. Someone will be inquisitive about their habitat. Should the names of the authors be repeated after the specific names in the index? Would it be necessary to reprint the names in the index that are listed on page 35? How would you index the article on page 39? Would you put more than Paraguay, Orthoptera of, and the names of the new genus and species? Would you repeat all the other names in the article? How would you index the notes in Doings of Societies? We think upon examination you will agree with us that it is as above remarked, a question of judgment, and that the NEWS index is fairly complete.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

CORRECTION.—Page 24, Vol. 16, lines 3 and 16, for *aurifer* read *pretans*.

WE regret to announce the death of Alpheus S. Packard, M.D., Ph.D., of Providence, Rhode Island.

In Holland's Moth Book, Nos. 23 and 24, Pl. xvii, should be transposed, both in reference to the plate and in the text on page 232.—EDGAR J. SMITH, Natick, Mass.

PSEUDOTAMILA CARMINATRA.—This little Noctuid was described by Dr. J. B. Smith in Trans-Amer. Ent. Soc., 1903, p. 207. In the check-list the name is misprinted *carminata*. The original account stated that the specimens were thought to have been collected by Mr. Mason, but the accurate locality (other than Colorado) was unknown. Recently Mr. John T. Mason showed me a considerable series, all collected in Denver. There is no doubt that he obtained the types. The species is very distinct and easily recognized.—T. D. A. COCKERELL.

NO POETRY IN BUGS?—Read the following verses by an unknown author, and find poetry and politics as well:

The lightning bug seems brilliant
But he has not any mind;
For he stumbles through existence
With his head light on behind.
The measuring worm is different;
When he starts out for pelf
He reaches to the limit,
And then he humps himself.

WITH regard to Mr. Kirkaldy's query as to how the giant water bugs move their hind legs, I would say that a live *Benacus griseus* was brought to me to-day and I at once put him in a bottle of water to see how he acted. He invariably moved the hind legs together, *not* alternately; I then took him out and placed him on a table to see him crawl, in this position he at first moved the hind legs together, but afterward alternately. Several more tests resulted in the same way, in swimming the hind legs were always moved together, in crawling they were always moved together at first, and afterwards, when he got used to the situation, alternately; the alternate movement was always, however, rather half-hearted and showed a tendency to revert to the swimming movement.

With regard to *Ranatra* I have a very distinct impression of having seen them move the hind legs together, *not* alternately when swimming, after having been thrown back in the water.—C. S. BRIMLEY.

Entomological Literature.

Coloration in *Polistes* forms the subject of quite a lengthy paper by Miss Wilhelmine M. Enteman recently issued by the Carnegie Institution of Washington, as publication No. 19. All Hymenopterists will welcome the work as it throws considerable light on the taxonomy and variation of this interesting and extensive genus of wasps. The matter of coloration is taken up first in its relation to the ontogeny of the wasp. The development of the colors was observed to pass through much the same stages as those described by Mayer for butterflies. In the case of *Polistes* the hypodermal pigment forms the lighter shades of drab and yellow markings where it has not been overshadowed by the darker cuticular pigment deposited in the chitin. A chemical examination of the pigment reveals the fact that it shows a great similarity in many of its reactions to the group of benzole derivatives known as the "azo" dyes. The color variation of large series of wasps has been examined and compared by means of statistical methods, and it is pointed out that variation in members of the genus is continuous, all of the widely different types of coloration shading into one another through insensible gradations. A correlation in color between the different parts of the body is shown and its relation worked out in detail.

One of the most interesting features is the relation which is to be observed between variation and environment. The development of pigment in the wasps aside from hereditary influences seems to depend in great measure on temperature and humidity. Thus the desert species of portions of Arizona and the southwest tend to be pale without the darker and warmer tones of brown and black shown in northern forms. This tendency toward melanism is evinced most strongly in the colder humid portions of the coastal region of both North America and Eurasia. A close relation between the forms inhabiting the eastern coast of Asia and of North America is pointed out and a map of the world showing distribution presented.

There is only one bad feature to mar the general excellence of the work, and that is the presence of a couple of very badly executed plates. Plate IV shows a number of inaccuracies in structure and wing venation and the figure purporting to be *Polistes rubiginosus* would scarcely be mistaken for that species by any one familiar with the latter. Text figure 1 is also inaccurately lettered.

No attempt at limiting species is made although a number of the points worked out will be of aid to the future entomologist who may undertake this difficult task.

C. T. B.

JERRY, a good friend of mine, has started in to form a collection of the fleas of the world. Do not send exchange lists or specimens unless asked for. Hardly necessary to say, that Jerry is the name of my dog.—PHILIP LAURENT.

Doings of Societies.

Minutes of meetings of Brooklyn Entomological Society, held at the residence of Mr. George Franck, 1040 DeKalb Avenue, Brooklyn, N. Y.

October 6, 1904.—Fifteen persons present, the President in the chair.

The admission of the Society to the Scientific Alliance of New York being reported, R. Ellsworth Call and Archibald C. Weeks were elected delegates to the Council of that body.

Dr. Carl Fulda, of Brooklyn, N. Y. was elected a member.

The President called attention to the opportunity for original research afforded by the rearing and identification of the larvæ of aquatic coleoptera. Heretofore, practically all the descriptions related to mature forms, while the identity of the larvæ had been neglected, there being very little authentic literature concerning them. The shed dytiscid larval and pupal skins remained intact and so perfect that they could be easily preserved and accurately studied. An obstacle in rearing the Dytiscidæ would be found in supplying sufficient mosquito and other larvæ to satisfy their ravenous appetites. When their natural food failed they developed cannibalistic traits, making it advisable that each larva should be reared in a separate jar.

Mr. Franck reported that a numerous swarm of *Danaï archippus* had been recently seen near Rutherford, New Jersey (one collector taking 700 specimens in two days), as proof of the generally accepted theory that the assembling of this species in the fall is preparatory for southward migration. Discussion by Messrs. Franck, Watson and Weeks as to the probability of northern hibernation of this butterfly.

Mr. Wasmuth reported the capture of a larva of *Callimorpha dyari*, at Jamaica, L. I., in the early spring, which fact, in Prof. Smith's opinion, was sufficient evidence of its hibernation.

Mr. Shoemaker exhibited a specimen of each of the following moths: *Cirrophanus triangulifer* captured on September 2, 1904, in Alexandria Co., Va., *Graphiphora garmani* taken on April 27, 1904, at Brooklyn, N. Y., and *Hepialus argenteomaculata* taken at electric light on May 30, 1904, at Washington, D. C., and the carab *Platynus cordatum*, of which he had ob-

tained 16 specimens at Washington, in September, the previously recorded captures being in the spring. The insect had always been considered rare and he had found it extremely local.

November 17, 1904.—Seventeen persons present, the President in the chair.

Messrs. Charles S. Leng and William T. Davis, of Staten Island, N. Y., were elected members.

Mr. Franck exhibited some interesting specimens taken by Mr. Marion H. Mead, of Passaic, N. J. 1. *Papilio troilus*, variation, between type and variation *texana*, the spots forming the submarginal row being wedge-shaped instead of circular. 2. Hybrid male of *C. angulifera*, and *C. promethea*. 3. *Erebus odora* ♀. The eggs of this moth were obtained but had so far not developed. 4. *Anisota rubicunda*. Left primary wholly suffused with pink causing transverse yellow band to become obsolete; right primary normal. 5. *Papilio turnus* ♂ showing a black round spot located just within and near middle of costal vein of primary.

Mr. Franck further reported that three specimens, 2 ♂ and 1 ♀, of *Sphinx franckii*, had been taken during the past season in Baltimore.

Mr. George P. Engelhardt read a paper descriptive of the collecting and other experiences of Mr. Jacob Doll and himself, during the past spring and summer, in Utah, whither they had gone in the interest of the Museums of the Brooklyn Institute of Arts and Sciences. They reached Beaver, where they had decided to locate, on May 14th, and from thence made excursions of varying distances in every direction through the adjacent canons and valleys, even remaining in camp a week at a time. Mr. Engelhardt journeyed on one occasion to St. George in the extreme southwestern corner of Utah, a distance of 175 miles, experiencing many inconveniences and privations on the trip. The nights were so cool that comparatively few moths came to light or sugar. Jack rabbits abounded but were not eaten by the natives because of their infestation by bot-fly grubs, 5 or 6 often occurring in one individual. The animals did not appear to be enfeebled by these parasites. The mature insect was not conclusively identified, but speci-

mens of a large bluish black fly, supposed to be the species in question, were taken. On hot days these flies rested on dry ditches or rocks. When disturbed they rose directly upward out of sight, returning in a few minutes to the same spot. A number of males of *Egeria tibialis* and *Cossus brucei* were captured by exposing the virgin females. In certain localities the surface of the ground was overrun by vast multitudes of the so-called "Utah cricket," *Anabrus simplex*. This grasshopper is some two inches in length and produces a low chirp, less loud than our field cricket. In the morning the crickets forsook their places of concealment among the sage-brush on the sand hills and attacked the alfalfa, returning in the evening in such numbers that it was impossible to avoid trampling upon them. The cultivation of fields infested by them had frequently to be abandoned, the farmers making no efforts to destroy them.

The trip to St. George was accomplished by wagon accompanied by a single guide with provisions and blankets. At night they slept on the well thatched roofs of house sheds or shacks, if available, and if not, on the ground, in their blankets. They traversed desert regions known as the Buckhorn, Paragonah and Cedar Valleys and the towns of Paragonah, Parowan, Cedar City, and Kanarra, Mormon settlements. The temperature often reached 100° F. The vegetation was generally scanty, consisting of mesquit, cactus and sage brush. Insects were correspondingly few, although flies caused much annoyance at meals. At Bellevue the vegetation became more diversified, ash, cottonwood, a species of prickly leaved oak and other trees besides many shrubs occurred. Here were taken *Catocala chelidonia* and *Sphinx oreodaphne* and *dollii*; also many Coleoptera and Hymenoptera on the flowers of a species of wild tobacco which grew profusely along an irrigating ditch. On descending a deep well to secure a blow snake a large number of specimens of *Eleodes obscura* were captured at the bottom, which was fairly covered by them. At St. George silkworm breeding was stated to be successfully conducted, 700 pounds of cocoons having been obtained the year previous. Cicindelidæ occurred in great numbers along the Virgin river which flows near the town. In a cave, on the

crest of a volcanic hill, along the river were found hundreds of skeletons of animals which had fallen or jumped in, but not being able to escape, had perished from starvation. Among the bones many specimens of the tenebrion, *Cryptoglossa verrucosa* were taken.

Five days were spent in camping in the Beaver Range mountains at an altitude of 10,000 feet. The few insects taken were chiefly those of the valley species. The expedition was extremely successful, many interesting species and specimens, in all orders of insects, some of which were new to science, besides numerous snakes and other reptiles and skins of animals being taken. The extended sojourn afforded ample opportunity for rearing large series of certain Lepidoptera, and a large supply of setting boards, of the spreading, while fresh and relaxed, of a great portion of the entomological collections. Detailed descriptions of the species taken and results obtained will shortly be published.

ARCHIBALD C. WEEKS, *Secretary*.

The January meeting of the Newark Entomological Society was held on the 8th with President Keller in the chair and 16 members present.

A new order of business, making the reading of papers on entomology and exhibition of specimens the last rule was proposed and accepted on motion. This rule, in its old place, generally caused a breaking up of the meeting.

A motion to hold two meetings monthly was lost.

The outing committee reported progress; also the curators; Mr. Bischoff is hard at work rearranging the collection of Coleoptera.

Mr. Dickerson gave an interesting account of the exhibits of insects at the St. Louis Exposition.

Mr. Grossbeck read an article on the life history of *Fenisea tarquinius* Fabr. written by Mr. Brehme.

Mr. Bischoff reported that he had larvæ of *Plinus fur* (collected), feeding on rags. Mr. Dickerson reported the capture of *Ceracis sallei* Mell., at Arlington and Chester, N. J., and *Hydrobius tessellatus* at Pottersville, N. J. (new to N. J.) Mr. Doll took five specimens of *Catocala marmorata* on sugar at

Bayonne, N. J. and found the larvæ of *Apatura clyton* numerous at Maplewood, N. J. in 1902 (both new to N. J.) Mr. Grossbeck reported the following specimens, none of them being recorded from this State before : *Panthea furcilla*. One grown larva on a tree trunk at Little Falls, N. J., September 1, 1902.

Habrosyne rectangula Ottol. One specimen at light, New Brunswick, N. J., June 7, 1904.

Mamestra anguina, Grt. One specimen bred from pupa, Paterson, N. J., June 26, 1904.

Memythrus tricincta Harr. One specimen captured and three specimens bred from galls of *Saperda concolor* from willow, Paterson, N. J., June 23rd to July 12th, 1903.

Memythrus asilipennis Bdv. One fresh ♂ specimen. Paterson, N. J., May 30, 1902.

OTTO BUCHHOLZ, *Secretary*.

The twenty-fourth regular and first annual meeting of the Mount Royal Entomological Club, Montreal, Que., was held on the 7th January. Mr. E. Denny, President, in the Chair. Ten members and five visitors were present. The election of officers for 1905 resulted as follows :

President, Mr. E. Denny, re-elected; Vice-President, Mr. G. R. Southee ; Secretary-Treasurer, Charles Stevenson, re-elected ; Recording Secretary, Mr. A. Denny ; Council, Mr. T. S. Robinson.

The following papers were read : "Insect disguises," by Mr. E. Denny ; "Caterpillars," by Mr. K. R. Stevenson ; "Insects in Commerce," illustrated by lantern slides, by Mr. Charles Stevenson. "The Most Valued Insect in My Collection," by all the members present.

Two new members were elected.

The rest of the evening was enjoyed in watching lantern views with an humorous recitation by Mr. K. Stevenson and concluded with refreshments during which plans for the year's work were discussed.

CHARLES STEVENSON, *Secretary-Treasurer*,
906 St. Urbain St., Montreal.

At the meeting of the Feldman Collecting Social held January 18th, at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth Street, Philadelphia; ten persons were present.

Mr. H. Wenzel exhibited, on behalf of H. Wenzel, Jr., work of several species of Scolytidæ. He reported the capture of *Aphodius inquinatus* and a moth *Plathyphena scabra* on January 1st, flying over the snow. Several interesting Cucujids are found in the burrows of Scolytidæ.

Mr. Daecke called attention to a male specimen of *Vespa germanica* caught by H. Wenzel, Jr., on January 1st, which would indicate that some of the males as well as the females of this species hibernate.

Mr. Haimbach showed some Noctuidæ, including *Feltia jaculifera*, *herilis* and *subgothica*, and spoke of the difficulty of separating the three species.

Mr. Laurent spoke of the necessity of the specialist being a field naturalist as well as a writer.

Dr. Castle exhibited a Forficulid from California.

Mr. Wenzel referred to *Cychnus vandykei* Roeschke, and said he believed it to be only a form of *elevatus*.

The following officers were elected for 1905:

President, E. Daecke; *Vice-President*, C. Few Seiss; *Secretary*, Frank Haimbach. Dr. Philip P. Calvert was unanimously elected an honorary member of the Social.

WM. J. FOX, *Secretary*.

The fourteenth regular quarterly meeting of the Pacific Coast Entomological Society was held on November 26, 1904, at the Café Odeon, 8 O'Farrell Street, San Francisco, President Fuchs in the chair.

Fifteen members present. Two new members were elected.

Mr. J. G. Grundel read a paper on the "Life History of *Lemonias virgulti*."

Mr. F. X. Williams communicated some "Notes on the larvæ of certain Lepidoptera."

Dr. F. E. Blaisdell reported taking ninety-six specimens of *Aphodius cribratus* on November 24th in the Alhambra Valley, Contra Costa County, California, from the form of a wood-rat's nest. These specimens were living in a clump of earth no

larger than a double-fist at the bottom of the nest—this soil was wet with excrementitious fluids. The larvæ were also taken. He also exhibited and reported taking the larvæ of an interesting mosquito from a hole in a sycamore tree. The hole did not contain more than a quart of water and there were at least 1,000 larvæ living in it. The larvæ were found there from July to November, and were conspicuous for their large anal gills.

Miss Julia Wright reported a "Trip Abroad," giving an interesting account of a visit to the British Museum.

Mr. Grundel exhibited *Kodisoma nigra*, a species of a Geometrid and the pupæ of *Lemonias virgulti*.

Mr. Williams showed *Attacus ceanothi*, that had been reared from a larva found on the spruce, and the larvæ of *Hepialus sequoiolus* and *Calosaturia mendocino*.

Mr. Edw. M. Ehrhorn exhibited a bunch of earth-pearls (*Margarodes trimeni*) from South Africa. These scale insects are found on the roots of *Rhus* sp. in Cape Colony. The natives gather and string them, and sell them in the open market as curios. They are used as ornaments for the neck or wrist. Each insect has the appearance of a beautiful pearl, the colors varying from pure white, through golden yellow to iridescent.

F. E. BLAISDELL, M. D., *Secretary*.

OBITUARY.

W. N. Tallant, of Cincinnati, Ohio, died on the 16th day of January last, at the age of forty-nine, after an illness of only a few days. He was born in Wheeling, W. Va., but went as a young man to Columbus, Ohio, where he was in the Pennsylvania Railroad Freight Office. He rose to a high position in the employment of this company and was with them for thirty years. He became interested in the study and collecting of Lepidoptera soon after going to Columbus, and that was where he did most of his work in that line. He was a very enthusiastic collector, and was unusually successful in rearing many varieties. He left a fine collection, especially of Ohio species.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest) in) are discontinued.

Pupae *P. cresphontes*, *P. ajax*, *D. hylæus* and other Lepidoptera for exchange. Wanted from original collectors only, Lycænidæ and Hesperidæ of U. S. and Canada with full data. W. W. Newcomb, M. D., 347 Trumbull Ave., Detroit, Mich.

Will collect next season all orders, chiefly Lepidoptera. Former correspondents invited to write. H. A. Kremers, White Bird, Idaho.

For exchange.—Several varieties of catocalæ of this locality for some of other localities. Also a large variety of other moths and butterflies. Dr. A. F. Hyde, Shelby, Ohio.

Loans of Lepidopterous freaks desired for purpose of photographing. Will give prints of same for privilege. Kindly write, stating what you have. I have a number of Entomological works to exchange for other books or N. A. Lepidoptera. Send for list. H. H. Newcomb, 43 Tremont St., Boston, Mass.

Diptera wanted from all parts of North America. Offer in exchange named European Diptera, named Indian Odonata and unnamed species of other orders from India. Could pay small price for collecting if from specially interesting localities. Must be on long pins, unset, in good condition with full data. E. Brunetti, General Post Office, Calcutta, India.

Lepidoptera.—Pupæ of *Phlegethontius quinquemaculatus* and *carolina*, *Papilio philenor* wanted.—George Franck, 1040 DeKalb Avenue, Brooklyn, New York.

Will exchange Californian Lepidoptera for any species of Hepialidæ, American or European, except *H. sequoiæ*, *montana* and *behrensii*. Will also take imperfect specimens. F. X. Williams, 1015 Scott St., San Francisco, Cal.

Cosmia paleacea and *puncterina* wanted at once from all parts of North Amer. Also *Chrysophanus hypophlæus* from mountain districts, and many common Noctuidæ.—F. H. Wolley Dod, Millarville, Alberta, N. W. T., Canada.

Wanted.—North American Lepidoptera, especially Catocalas and Sphingidæ, also exotic Papilios. Will pay cash or give good exchange. Herman J. Erb, 536 Plum Place, Union Hill, N. J.

Catocala and Moths of Pennsylvania. The undersigned will give good exchange in cash or specimens for the following Catocala: *Calocala olivia*, *sancta*, *dulciola*, *mira*, *frederici*, *amestris*, *rosalinda*, *hermia*, *elda*, *dejecta*, and *luctuosa*, or for any moths of Pennsylvania that are new to my collection. Philip Laurent, 31 East Mt. Airy Avenue, Philadelphia, Pa.

Bred specimens of *Paphia troglodyta* and other diurnals in papers, also cocoons of bombycids and pupæ of sphinges for exchange. Wish *sphinges*. R. R. Rowley, Louisiana, Mo.

Lepidoptera: I have some good Noctuidæ in exchange for desirable North American Heterocera. *Xylina*, *Calocampa* and *Plusiæ* especially desired. Henry Engel, Box 35, Oak Station P. O., Allegheny Co., Pennsylvania.

Lepidoptera to exchange for specimens new to my collection. Chas. Krueger, 1162 N. Lincoln Street, Chicago, Ill.

Promethea Cocoons to exchange for Lepidoptera or other cocoons. D. M. Fuller, 221 Lancaster St., Albany, N. Y.

Coleoptera.—*Pinus fur*, *P. brunneus* and *Lomechusa cava* to exchange for Cicindelidæ. G. R. Pilate, 43 Wrae St., Dayton, Ohio.

Wanted.—North American Bibionidæ for study. Will name and return material sent, for the sake of learning the distribution. W. A. Hooker, care of Dr. H. T. Fernald, Mass. Agl. College, Amherst, Mass.

Exchange.—B. C. Lepidoptera in exchange for high grade guitar, typewriter, 3 A F. P. kodak, 4 B alvista or 5x7 Seneca No. 9 camera or like. Send description and conditions. Theo. Bryant, Wellington, B. C. Can.

Wanted.—Lycænidæ from North America and Europe, and early stages especially. Complete data required. Californian Lepidoptera given in exchange.—Fordyce Grinnell, Jr., Palo Alto, California.

Wanted.—Riley's 3rd, 4th and 6th Missouri Reports. Will pay cash for same.—Wilmon Newell, Box 583, Shreveport, La.

Offers Wanted.—U. S. A. Coleoptera, Mantidæ, Phasmidæ and Orthoptera by Entomological student.—W. T. Page, 6 Rylett Crescent, Shepherds' Bush, London W., England.

Lepidoptera.—For exchange perfect specimens of *Pamphila aaronii*, *Salyrus alope* var *maritima*, *Pamphila panosquin*, *P. olho*, *egeremet*, *Yponomeuta multipunctella*. Send offers to Frank Haimbach, 1309 Allegheny Avenue, Philadelphia, Penna.

Coleoptera.—I desire to exchange for good N. A. beetles especially from the southern states.—H. F. Wickham, Iowa City, Iowa.

I have 400 *Promethea* (300 *Cynthia*, 100 *Cecropia*) and a few *Polyphemus* cocoons to exchange for other common N. A. pupæ or *Lepidoptera* in papers.—John H. West, 5335 E. Letterly St., Philadelphia, Pa.

Wanted.—*Lycænas* and *Theclis* not in my collection, either for cash or good exchange. Send list.—H. H. Brehme, 583 18th Ave., Newark N. J.

Wanted in quantities, for cash or exchange, perfect specimens of common species of Lepidoptera, Coleoptera, Hymenoptera, Diptera and Hemiptera.—The Kny-Scheerer Co., Department of Natural Science, 255 Fourth Ave., N. Y. City.

Wanted.—Uhler's Papers on Hemiptera. Will give cash in exchange or insects, or any other papers. Will also name aquatic Hemiptera for privilege of examination. Write before sending.—J. R. de la Torre Bueno, 25 Broad St., New York City.

Lepidoptera.—Cocoons of North American *Limicadidæ* wanted. Will give *luna* cocoons in exchange.—John A. Grossbeck, 25 Totowa Ave., Paterson, N. J.

North American Lepidoptera wanted in exchange for others. Have hundreds of specimens to exchange.—Send list to Jos. H. Reading, 775 N. Rockwell St., Chicago.

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Cocoons of *Saturnia pyri*, 25c. each; coc. of *Saturnia spini*, 25c. each; coc. of *Saturnia carpi*, 10c. each; of *Harpyia vinula*, 10c. each; coc. of *Endromis versicolor*, 15c. each; chrysalis of *Vanessa levana*, 8c. each.

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F. C. BOWDITCH, 164 Rawson Rd., Brookline, Norfolk Co., Mass.

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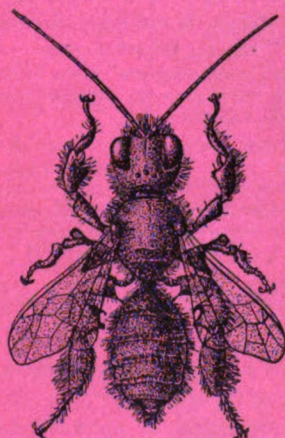
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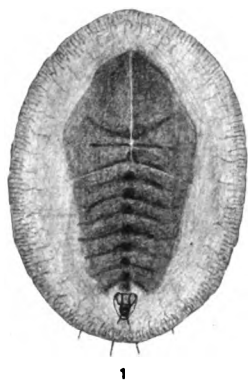
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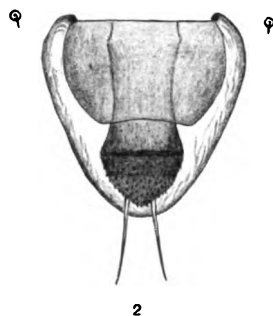
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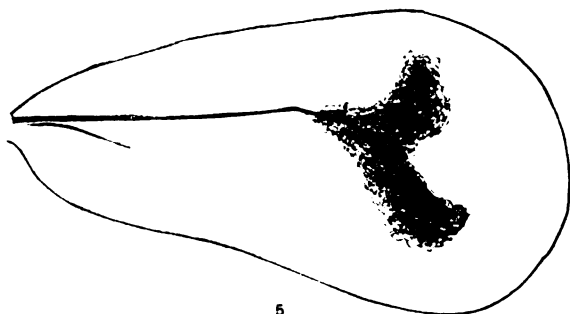
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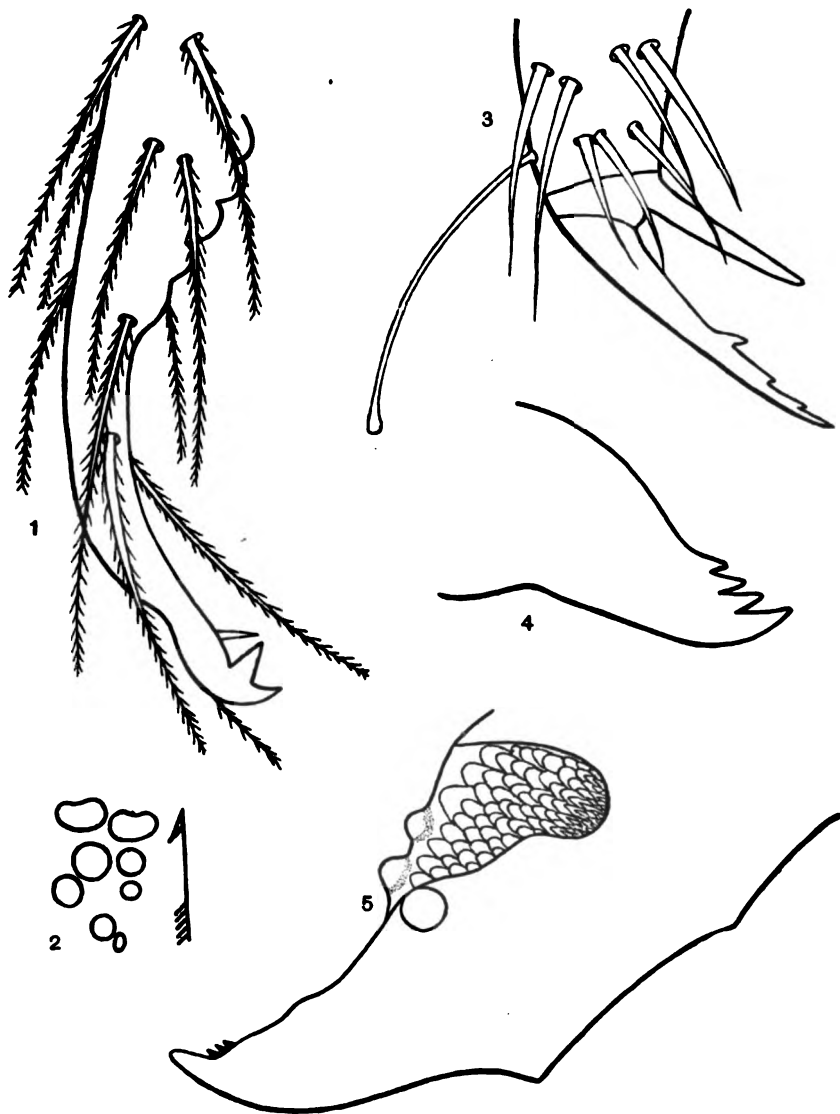


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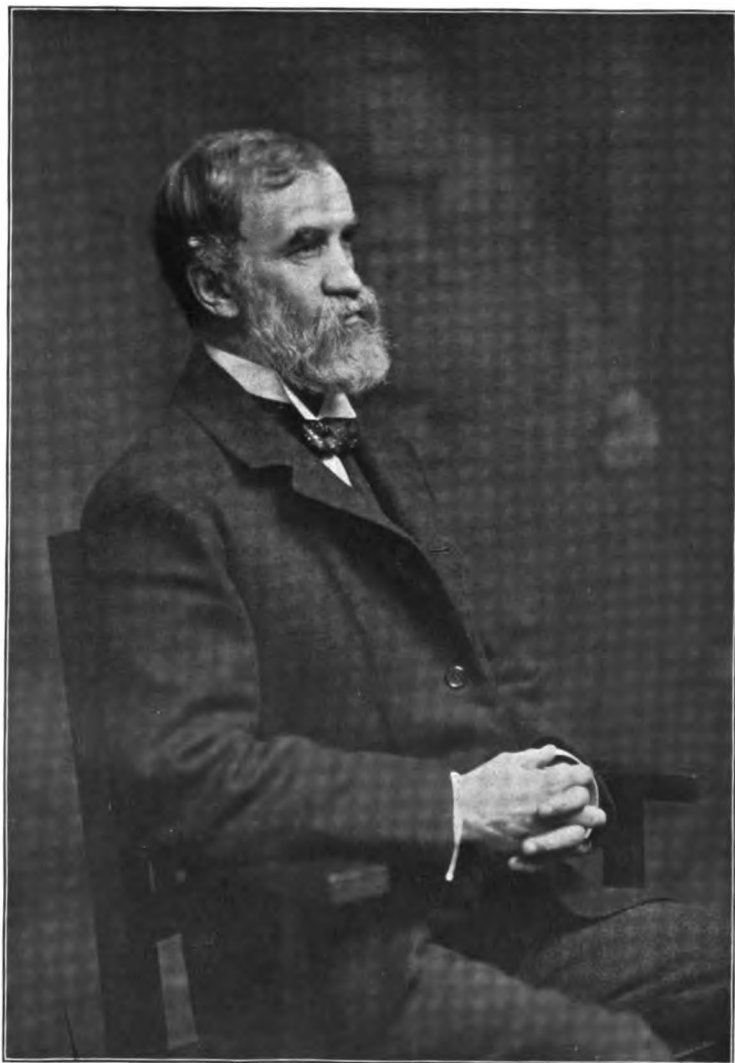


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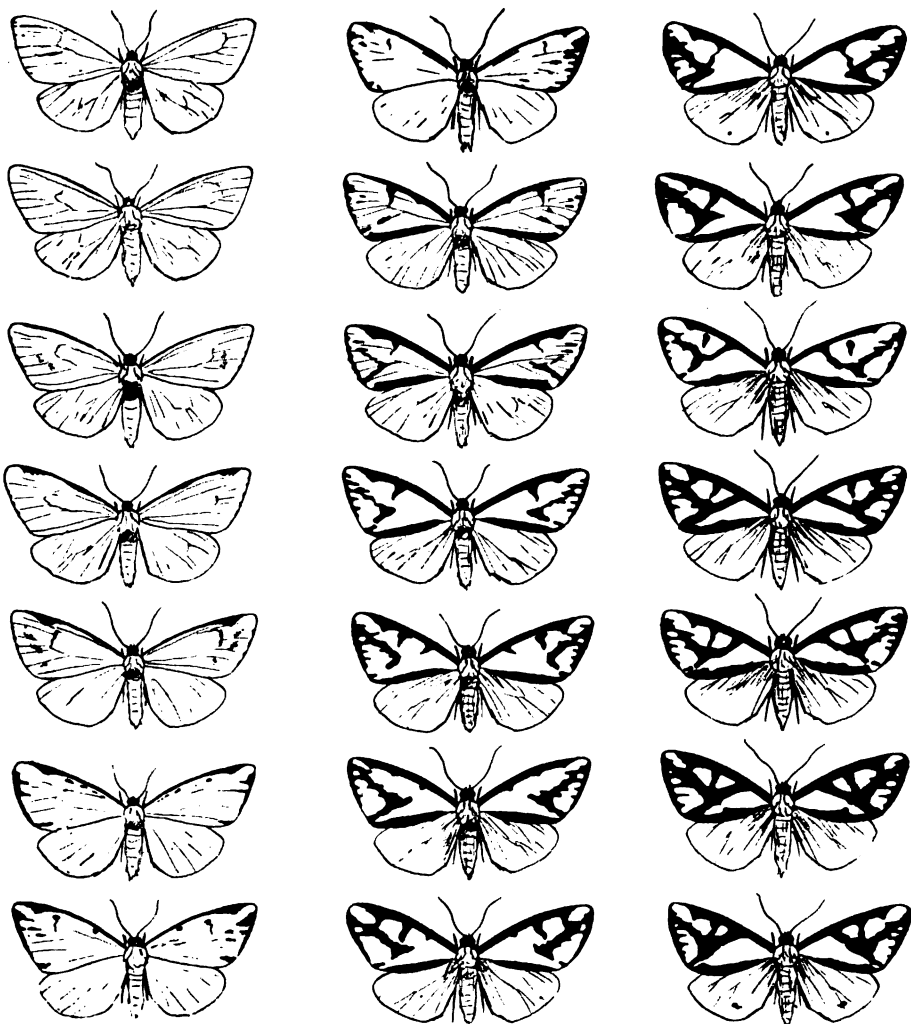
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VARIATION IN CALLIMORPHA.
C. COLONA VAR. REVERSA STRETCH.

(See May NEWS, p. 154.)

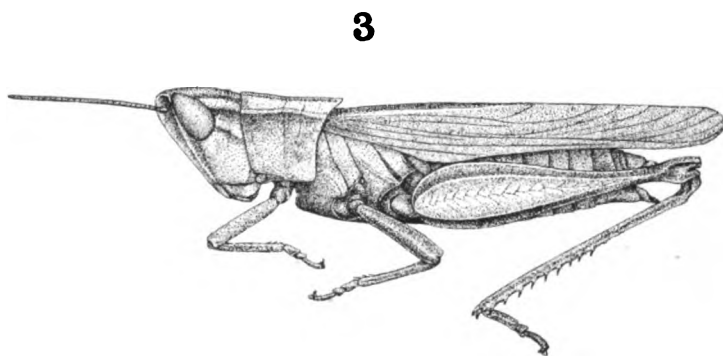
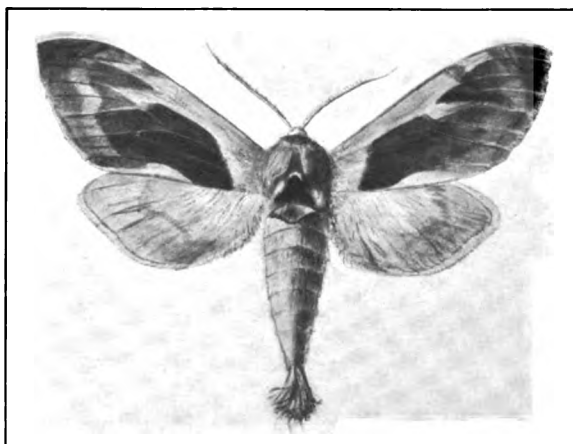
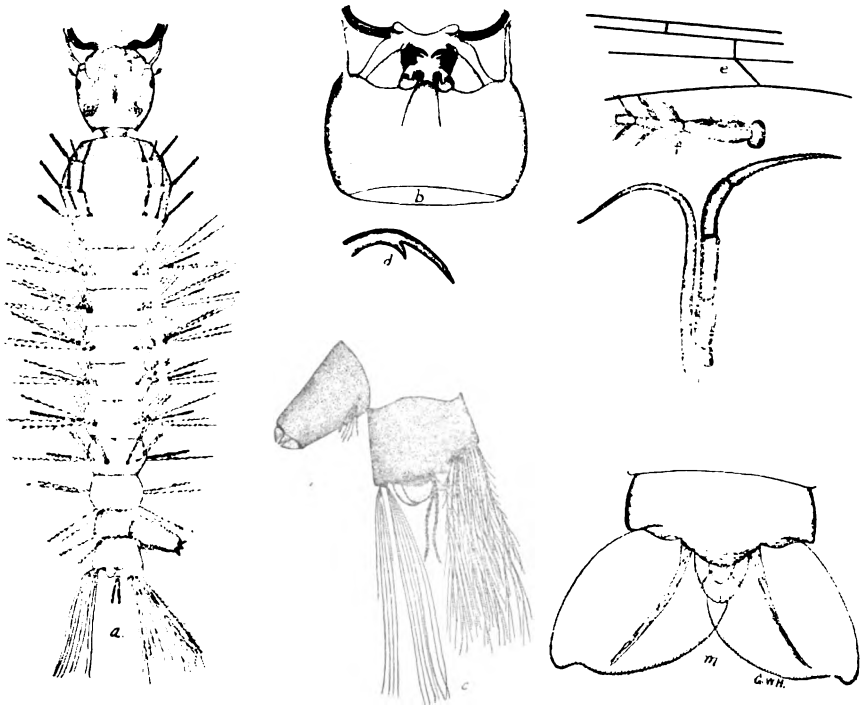


Fig. 1.—*Orphuella punctata* (De Geer). Female. Dominica. Dorsal view of head and pronotum. Fig. 2.—*Orphulella balloui* n. sp. Dorsal view of head and pronotum of female type. Fig. 3.—Lateral view of specimen represented in fig. 2 ($\times 3$).

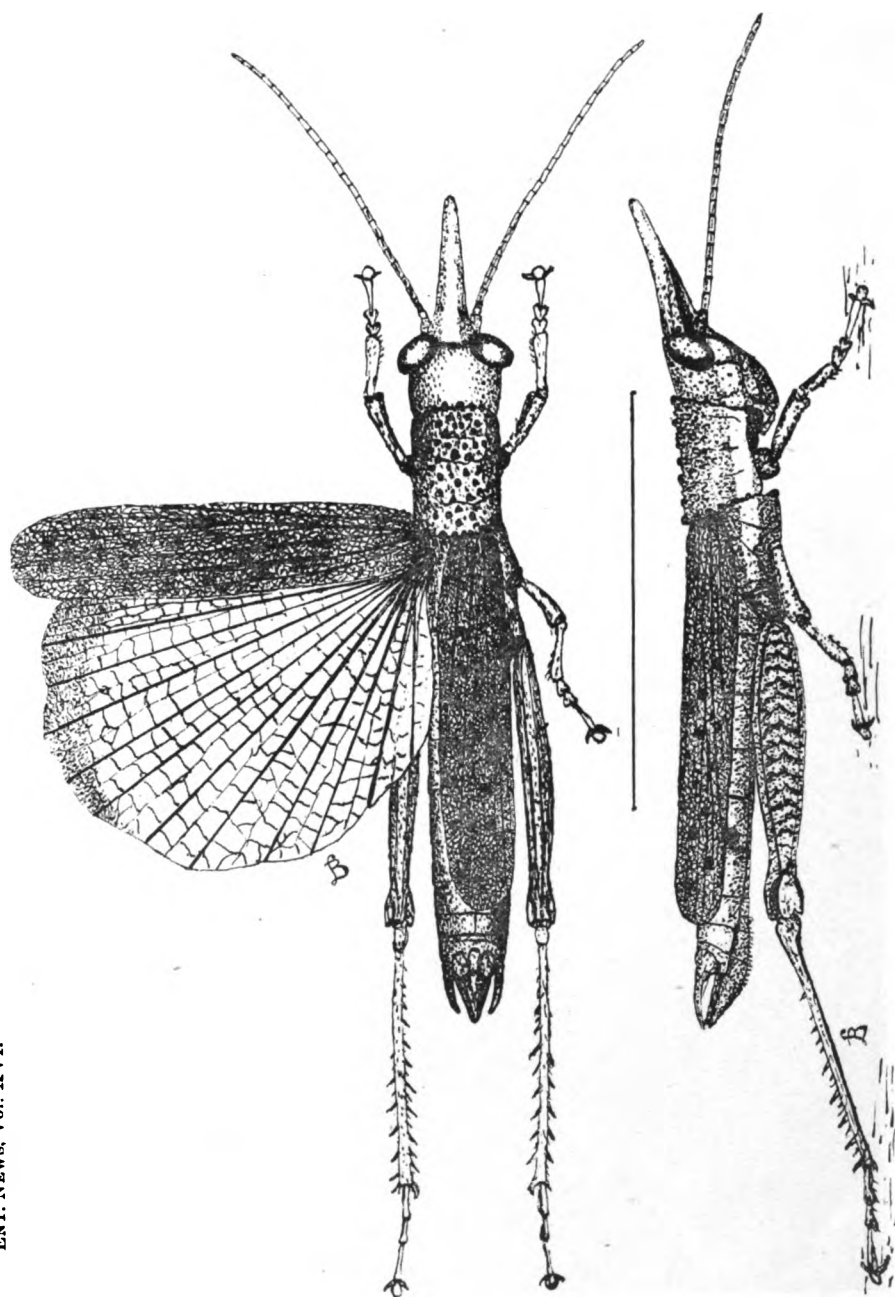


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MEGARHINUS PORTORICENSIS

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| <i>a.</i> Larva of <i>M. portoricensis</i> . | <i>e.</i> Cross-veins of wing ♂. |
| <i>b.</i> Under side of head showing mandible. | <i>f.</i> First five segments of antenna ♂. |
| <i>c.</i> Last anal segment with anal flaps. | <i>h.</i> Palpus and beak ♂. |
| <i>d.</i> The larger claw of the midtarsi ♂. | <i>m.</i> Anal flaps of pupa. |



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